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MEGATEK CORP SAN DIEGO CA F/G 17/7  
OMEGA JAPAN ANTENNA SYSTEM: MODIFICATION AND VALIDATION TESTS. --ETC(U)  
OCT 79 J C HANSELMAN N00123-78-C-0043

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NOSC-TR-492-VOL-2

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NOSC-TR-492-VOL-2

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Volume 2

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NOSC TR 492 - Volume 2

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Technical Report 492  
Volume 2

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## OMEGA JAPAN ANTENNA SYSTEM: MODIFICATION AND VALIDATION TESTS.

Volume 2: Data Sheets.

JC/Hanselman, Megatek Corp.

15 October 1979

Final Report

Prepared for  
US Coast Guard

Approved for public release; distribution unlimited

NAVAL OCEAN SYSTEMS CENTER  
SAN DIEGO, CALIFORNIA 92152

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AN ACTIVITY OF THE NAVAL MATERIAL COMMAND

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Commander

HL BLOOD

Technical Director

ADMINISTRATIVE INFORMATION

Electronic measurements were performed on the OMEGA Japan Antenna System during the months of October and November 1978. The work was performed under NOSC Project MP01538B10 with Megatek Corporation as contractor under NOSC Contract N00123-78-C-0043, Task 014.

Volume 1 is the report proper. Volume 2 contains data sheets.

Released by  
JH Richter, Head  
Electromagnetic Propagation  
Division

Under authority of  
JD Hightower, Head  
Environmental Sciences  
Department

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER NOSC Technical Report 492 (TR 492) ✓	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) OMEGA JAPAN ANTENNA SYSTEM: MODIFICATION AND VALIDATION TESTS (Two Volumes) Volume 2		5. TYPE OF REPORT & PERIOD COVERED Final
7. AUTHOR(s) JC Hanselman (Megatek Corporation)		6. PERFORMING ORG. REPORT NUMBER
9. PERFORMING ORGANIZATION NAME AND ADDRESS Naval Ocean Systems Center San Diego, CA 92152 Megatek Corporation ✓ San Diego, CA 92106		8. CONTRACT OR GRANT NUMBER(s) N00123-78-C-0043 ✓
11. CONTROLLING OFFICE NAME AND ADDRESS US Coast Guard Washington, DC 20591		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS NOSC MP01538B10
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		12. REPORT DATE 15 October 1979
		13. NUMBER OF PAGES 65
		15. SECURITY CLASS. (of this report) Unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report)  Approved for public release; distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Block 16)  DTIC SELECTED APR 2 1980		
18. SUPPLEMENTARY NOTES  Volume 1 is the report proper. Volume 2 contains data sheets.		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) OMEGA vlf navigation system      Measurements - electrical Antennas - configuration      Radiation resistance - efficiency Monopole antenna		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number)  Electronic measurements were performed on the OMEGA Japan antenna system during October-November 1978. The work was performed by Megatek Corporation under contract and by NOSC under Project MP01538B10. The electrical height of the antenna is 210 metres for all frequencies. The station will be able to radiate 10 kW with antenna currents of 360 amperes at 10.2 kHz to 270 amperes at 13.6 kHz. Recommendations are made regarding the gear ratios to use with the variometers.		

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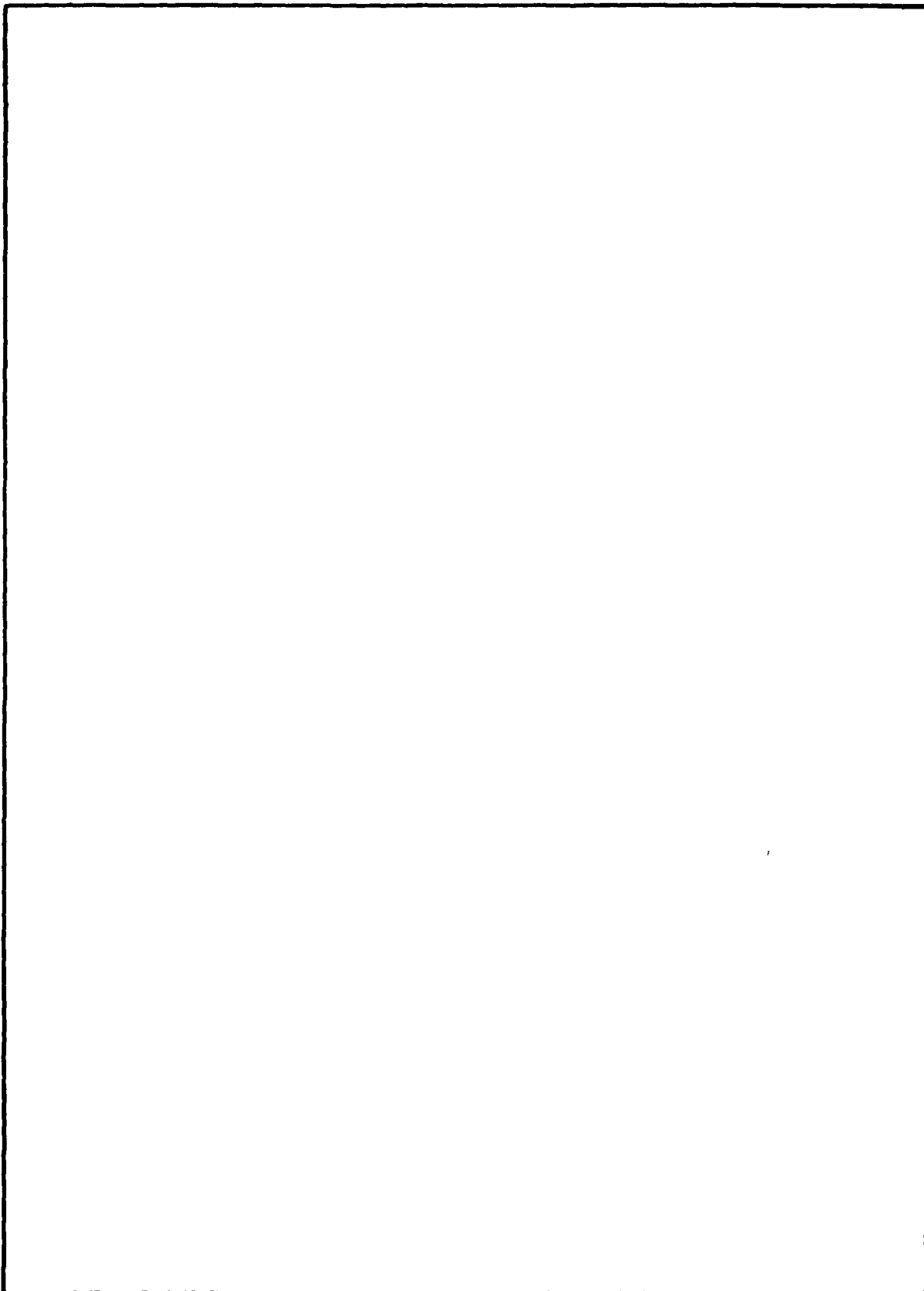
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## INTRODUCTION

During the performance of modification and validation tests at OMEGA Japan, data and all pertinent information collected were recorded on appropriate data sheets. This information was later transcribed as necessary to data sheets designed to facilitate analysis and computation of desired operating parameters.

These data and computation sheets are presented herewith in rough form for future reference.

## DATA SHEET 5 (DS-5)

## RADIO FIELD INTENSITY MEASUREMENTS

PAGE 1 OF 2

OMEGA STATION: JAPAN

SITE NO. C 1

DATE: 26 OCT 1978

I<sub>as</sub> 150 A.K<sub>1</sub> 0.98K<sub>2</sub> 0.99K<sub>3</sub> 1.00LOOP HEIGHT 2 (m. ~~ft.~~)  
(ABOVE: SURFACE - ~~SEA LEVEL~~)

TRIPOD X

HELICOPTER

TYPE OF MEASUREMENT: HELICOPTER CAL. X

BENCHMARK

ROUTINE

TIME (LOCAL)	FREQUENCY (kHz)	E <sub>g</sub> (mV)	HEADING (Mag.)	D1	D	M	E	D2	DIST. km.	AZ. OT.
1254	10.20	60.0								
	13.60	80.2								
	11.1/3	64.5								
	11.05	63.5								
1248	F <sub>t</sub> 12.80	74.4								
1300	10.20	61.2								
	13.60	80.8								
	11-1/3	64.3								
	11.05	63.2								
1255	F <sub>t</sub> 12.80	74.2								
1310	10.20	60.4								
	13.60	80.1								
	11-1/3	63.7								
	11.05	63.7								
1305	F <sub>t</sub> 12.80	73.9								

COMMENT: CENTER OF HELO PAD. POOR NULL  $\approx 10^\circ$   
LEFT OF TOWER.



## DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS *PAGE 2 OF 2.*OMEGA STATION: JAPANSITE NO. C1DATE: 26 OCT 1978 $I_{as}$  150 A.  $K_1$  0.98  $K_2$  0.99  $K_3$  1.00LOOP HEIGHT 2 (m. ~~7.4~~.)  
(ABOVE: SURFACE - ~~SEA LEVEL~~)TRIPOD XHELICOPTER       TYPE OF MEASUREMENT: HELICOPTER CAL. XBENCHMARK       ROUTINE       

TIME (LOCAL)	FREQUENCY (kHz)	$E_g$ (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
<u>1325</u>	10.20	<u>60.5</u>					
	13.60	<u>80.4</u>					
	11.1/3	<u>63.6</u>					
	11.05	<u>63.4</u>					
<u>1318</u>	$F_t$ 12.80	<u>73.8</u>					

	10.20						
	13.60						
	11-1/3						
	11.05						
	$F_t$ 12.80						

	10.20						
	13.60						
	11-1/3						
	11.05						
	$F_t$ 12.80						

COMMENT

## DATA SHEET 5 (DS-5)

## RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: JAPANSITE NO. C 1DATE: 26 OCT 1978 $I_{as}$  150 A. $K_1$  0.98 $K_2$  1.00 $K_3$  1.00LOOP HEIGHT 2 (m. ~~ft.~~)  
(ABOVE: SURFACE - ~~SEA LEVEL~~)TRIPOD       HELICOPTER XTYPE OF MEASUREMENT: HELICOPTER CAL. XBENCHMARK       ROUTINE       

TIME (LOCAL)	FREQUENCY (kHz)	$E_g$ (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1403	10.20	56.8	105				
1403	13.60	75.1					
1402	11.1/3	59.3					
1400	11.05	58.6					
1355	$F_t$ 12.80	68.1					

1408	10.20	56.3					
1407	13.60	75.2					
1406	11-1/3	59.9					
1405	11.05	59.4					
1404	$F_t$ 12.80	68.7					

1413	10.20	55.9					
1412	13.60	75.6					
1411	11-1/3	60.1					
1410	11.05	59.8					
1409	$F_t$ 12.80	69.5					

COMMENT: LOOP SIDE (LEFT) OF HELO TOWARD THE  
STATION.

## DATA SHEET 5 (DS-5)

## RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: JAPANSITE NO. C 1DATE: 26 OCT 1978 $I_{as}$  150 A.  $K_1$  0.98  $K_2$  1.00  $K_3$  1.00LOOP HEIGHT 2 (m. ~~ft.~~)  
(ABOVE: SURFACE - ~~SEA LEVEL~~)TRIPOD       HELICOPTER XTYPE OF MEASUREMENT: HELICOPTER CAL. XBENCHMARK       ROUTINE       

TIME (LOCAL)	FREQUENCY (kHz)	$E_g$ (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1421	10.20	56.2	285				
1420	13.60	75.2					
1419	11.1/3	59.9					
1418	11.05	59.3					
1417	$F_t$ 12.80	69.0					

1428	10.20	55.4					
1427	13.60	74.3					
1425	11-1/3	59.3					
1424	11.05	59.1					
1423	$F_t$ 12.80	69.6					

1433	10.20	55.6					
1432	13.60	74.0					
1431	11-1/3	59.3					
1430	11.05	58.8					
1429	$F_t$ 12.80	68.4					

COMMENT: LOOP SIDE (LEFT) OF HELO AWAY FROM THE STATION.

## DATA SHEET 5 (DS-5)

## RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: JAPANSITE NO. C2DATE: 29 OCT 1978I<sub>as</sub> 350 A. K<sub>1</sub> 0.98 K<sub>2</sub> 0.99 K<sub>3</sub> 1.00LOOP HEIGHT 2 (m./~~ft~~)  
(ABOVE: SURFACE - ~~SEA LEVEL~~)TRIPOD X

HELICOPTER \_\_\_\_\_

TYPE OF MEASUREMENT: HELICOPTER CAL. X

BENCHMARK \_\_\_\_\_

ROUTINE \_\_\_\_\_

TIME (LOCAL)	FREQUENCY (kHz)	E <sub>g</sub> (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1338	10.20	29.3					
1337	13.60	39.6					
1336	11.1/3	32.0					
1335	11.05	31.4					
1335	F <sub>t</sub> 12.80	37.2					

1343	10.20	29.3					
1342	13.60	39.5					
1341	11-1/3	32.3					
1340	11.05	31.4					
1339	F <sub>t</sub> 12.80	37.5					

1347	10.20	29.4					
1346	13.60	39.7					
1345	11-1/3	32.2					
1345	11.05	31.4					
1344	F <sub>t</sub> 12.80	37.4					

COMMENT

## DATA SHEET 5 (DS-5)

## RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: JAPAN

SITE NO. C2DATE: 29 OCT 1978I<sub>as</sub> 350 A.K<sub>1</sub> 0.98K<sub>2</sub> 1.00K<sub>3</sub> 1.00LOOP HEIGHT 2 (m. ~~7.5~~)  
(ABOVE: SURFACE - ~~SEA LEVEL~~)

TRIPOD \_\_\_\_\_

HELICOPTER XTYPE OF MEASUREMENT: HELICOPTER CAL. X

BENCHMARK \_\_\_\_\_

ROUTINE \_\_\_\_\_

TIME (LOCAL)	FREQUENCY (kHz)	E <sub>g</sub> (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1408	10.20	27.2	340				
1407	13.60	36.5					
1406	11.1/3	29.6					
1405	11.05	29.0					
1404	F <sub>t</sub> 12.80	34.4					

1413	10.20	27.1					
1412	13.60	36.5					
1411	11-1/3	29.5					
1410	11.05	28.9					
1409	F <sub>t</sub> 12.80	34.7					

1417	10.20	27.1					
1416	13.60	36.4					
1415	11-1/3	29.7					
1415	11.05	28.9					
1414	F <sub>t</sub> 12.80	34.4					

COMMENT: LOOP SIDE (LEFT) OF HELD TOWARD THE STATION.

## DATA SHEET 5 (DS-5)

## RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: JAPANSITE NO. C 2DATE: 29 OCT 1978I<sub>as</sub> 350 A. K<sub>1</sub> 0.98 K<sub>2</sub> 1.00 K<sub>3</sub> 1.00LOOP HEIGHT 2 (m. ~~ft.~~)  
(ABOVE: SURFACE - ~~SEA LEVEL~~)

TRIPOD \_\_\_\_\_

HELICOPTER XTYPE OF MEASUREMENT: HELICOPTER CAL. X

BENCHMARK \_\_\_\_\_

ROUTINE \_\_\_\_\_

TIME (LOCAL)	FREQUENCY (kHz)	E <sub>g</sub> (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1424	10.20	27.4	160				
1423	13.60	36.4					
1422	11.1/3	29.2					
1421	11.05	29.0					
1420	F <sub>t</sub> 12.80	34.5					

1428	10.20	27.1					
1427	13.60	36.4					
1426	11-1/3	29.6					
1426	11.05	28.9					
1425	F <sub>t</sub> 12.80	34.6					

1433	10.20	27.3					
1432	13.60	36.6					
1430	11-1/3	29.9					
1430	11.05	29.0					
1429	F <sub>t</sub> 12.80	34.6					

COMMENT: LOOP SIDE (LEFT) OF HELD AWAY FROM THE STATION.

## DATA SHEET 5 (DS-5)

## RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: JAPANSITE NO. 2DATE: 29 OCT 1978 $I_{as}$  350 A. $K_1$  0.98 $K_2$  1.00 $K_3$  1.00LOOP HEIGHT 2 (m. ~~ft.~~)  
(ABOVE: SURFACE - ~~SEA LEVEL~~)

TRIPOD \_\_\_\_\_

HELICOPTER X

TYPE OF MEASUREMENT: HELICOPTER CAL. \_\_\_\_\_

BENCHMARK \_\_\_\_\_

ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	$E_g$ (mV)	HEADING (Mag.)	D M E		DIST. km.	AZ. OT.
				D1	D2		
1408	10.20	27.2	340				
1407	13.60	36.5					
1406	11.1/3	29.6					
1405	11.05	29.0					
1404	$F_t$ 12.80	34.4					
1413	10.20	27.1					
1412	13.60	36.5					
1411	11-1/3	29.5					
1410	11.05	28.9					
1409	$F_t$ 12.80	34.7					
1417	10.20	27.1					
1416	13.60	36.4					
1415	11-1/3	29.7					
1415	11.05	28.9					
1414	$F_t$ 12.80	34.4					

COMMENT: LOOP SIDE (LEFT) OF HELD TOWARD THE STATION.

HEIGHT-GAIN MEASUREMENT.

## DATA SHEET 5 (DS-5)

## RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: JAPANSITE NO. 2DATE: 29 OCT 1978I<sub>as</sub> 350 A. K<sub>1</sub> 0.98 K<sub>2</sub> 1.00 K<sub>3</sub> 1.00LOOP HEIGHT 2 (m. ~~ft.~~)  
(ABOVE: SURFACE - ~~SEA LEVEL~~)TRIPOD       HELICOPTER XTYPE OF MEASUREMENT: HELICOPTER CAL.       BENCHMARK       ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	E <sub>g</sub> (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1424	10.20	27.4	160				
1423	13.60	36.4					
1422	11.1/3	29.2					
1421	11.05	29.0					
1420	F <sub>t</sub> 12.80	34.5					

1428	10.20	27.1					
1427	13.60	36.4					
1426	11-1/3	29.6					
1426	11.05	28.9					
1425	F <sub>t</sub> 12.80	34.6					

1433	10.20	27.3					
1432	13.60	36.6					
1430	11-1/3	29.9					
1430	11.05	29.0					
1429	F <sub>t</sub> 12.80	34.6					

COMMENT: LOOP SIDE (LEFT) OF HELD AWAY FROM THE STATION.

HEIGHT-GAIN MEASUREMENT.



## DATA SHEET 5 (DS-5)

## RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: JAPANSITE NO. 2DATE. 29 OCT 1978 $I_{as}$  350 A.  $K_1$  0.98  $K_2$  1.00  $K_3$  1.02LOOP HEIGHT 500 (ft.)  
(ABOVE: ~~SURFACE~~ - SEA LEVEL)

TRIPOD \_\_\_\_\_

HELICOPTER X

TYPE OF MEASUREMENT: HELICOPTER CAL. \_\_\_\_\_

BENCHMARK \_\_\_\_\_

ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	$E_g$ (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1443	10.20	30.4	340				
1442	13.60	40.0					
1441	11.1/3	33.3					
1440	11.05	32.4					
1439	$F_t$ 12.80	38.7					

	10.20						
	13.60						
	11-1/3						
	11.05						
	$F_t$ 12.80						

	10.20						
	13.60						
	11-1/3						
	11.05						
	$F_t$ 12.80						

COMMENT: LOOP SIDE (LEFT) OF HELO TOWARD THE STATION.

HEIGHT-GAIN MEASUREMENT.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: JAPAN SITE NO. 2 DATE: 29 Oct 1978

$I_{as}$  350 A.  $K_1$  0.98  $K_2$  1.00  $K_3$  1.07

LOOP HEIGHT 1,000 (ft.) TRIPOD \_\_\_\_\_ HELICOPTER X  
(ABOVE: ~~SEA LEVEL~~ - SEA LEVEL)

TYPE OF MEASUREMENT: HELICOPTER CAL. \_\_\_\_\_ BENCHMARK \_\_\_\_\_ ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	$E_g$ (mV)	HEADING (Mag.)	D M E		DIST. km.	AZ. OT.
				D1	D2		
1453	10.20	30.8	340				
1452	13.60	40.9					
1451	11.1/3	33.5					
1451	11.05	32.5					
1450	$F_t$ 12.80	39.0					

	10.20						
	13.60						
	11-1/3						
	11.05						
	$F_t$ 12.80						

	10.20						
	13.60						
	11-1/3						
	11.05						
	$F_t$ 12.80						

COMMENT: LOOP SIDE (LEFT) OF HELD TOWARD THE  
STATION.  
HEIGHT-GAIN MEASUREMENT.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: JAPAN

SITE NO. 2

DATE: 29 OCT 1978

$I_{as}$  350 A.  $K_1$  0.98  $K_2$  1.00  $K_3$  1.07

LOOP HEIGHT 1,500 (ft.)  
(ABOVE: ~~SURFACE~~ - SEA LEVEL)

TRIPOD       

HELICOPTER X

TYPE OF MEASUREMENT: HELICOPTER CAL.       

BENCHMARK       

ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	$E_g$ (mV)	HEADING (Mag.)	D1	D	M	E	D2	DIST. km.	AZ. OT.
1504	10.20	31.2	340							
1503	13.60	40.9								
1502	11.1/3	33.6								
1501	11.05	32.6								
1500	$F_t$ 12.80	38.9								

	10.20									
	13.60									
	11-1/3									
	11.05									
	$F_t$ 12.80									

	10.20									
	13.60									
	11-1/3									
	11.05									
	$F_t$ 12.80									

COMMENT: LOOP SIDE (LEFT) OF HELD TOWARD THE STATION.  
HEIGHT-GAIN MEASUREMENT.

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: JAPAN SITE NO. 2 DATE: 29 OCT 1978

$I_{as}$  350 A.  $K_1$  0.98  $K_2$  1.00  $K_3$  1.07

LOOP HEIGHT 2,000 (ft.) (ABOVE: ~~SURFACE~~ - SEA LEVEL) TRIPOD \_\_\_\_\_ HELICOPTER X

TYPE OF MEASUREMENT: HELICOPTER CAL. \_\_\_\_\_ BENCHMARK \_\_\_\_\_ ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	$E_g$ (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1514	10.20	31.4	340				
1513	13.60	40.9					
1512	11.1/3	33.8					
1511	11.05	33.0					
1510	$F_t$ 12.80	38.9					

	10.20						
	13.60						
	11-1/3						
	11.05						
	$F_t$ 12.80						

	10.20						
	13.60						
	11-1/3						
	11.05						
	$F_t$ 12.80						

COMMENT: LOOP SIDE (LEFT) OF HELD TOWARD THE STATION.

HEIGHT-GAIN MEASUREMENT.

## DATA SHEET 5 (DS-5)

## RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: JAPANSITE NO. B2DATE: 29 OCT 1978I<sub>as</sub> 350 A. K<sub>1</sub> 0.98 K<sub>2</sub> 0.99 K<sub>3</sub> 1.00LOOP HEIGHT 2 (m. ~~ft.~~)  
(ABOVE: SURFACE - ~~SEA LEVEL~~)TRIPOD XHELICOPTER       TYPE OF MEASUREMENT: HELICOPTER CAL.       BENCHMARK XROUTINE       

TIME (LOCAL)	FREQUENCY (kHz)	E <sub>g</sub> (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1338	10.20	29.3					
1337	13.60	39.6					
1336	11.1/3	32.0					
1335	11.05	31.4					
1335	F <sub>t</sub> 12.80	37.2					

1343	10.20	29.3					
1342	13.60	39.5					
1341	11-1/3	32.3					
1340	11.05	31.4					
1339	F <sub>t</sub> 12.80	37.5					

1347	10.20	29.4					
1346	13.60	39.7					
1345	11-1/3	32.2					
1345	11.05	31.4					
1344	F <sub>t</sub> 12.80	37.4					

COMMENT: SAME DATA AS HELD CALIBRATION

## DATA SHEET 5 (DS-5)

## RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: JAPAN SITE NO. 1-1 DATE: 1 November 1978 $I_{as}$  300 A.  $K_1$  0 . 98  $K_2$  1 . 00  $K_3$  1 . 07LOOP HEIGHT 1000 (~~X~~/ft.) TRIPOD \_\_\_\_\_ HELICOPTER X  
(ABOVE: ~~XXXX~~ - SEA LEVEL)TYPE OF MEASUREMENT: HELICOPTER CAL. \_\_\_\_\_ BENCHMARK \_\_\_\_\_ ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	$E_g$ (mV)	HEADING (Mag.)	D M E D1 D2		DIST. km.	AZ. OT.
1304	10.20	25.3	340	36102	32940	30.2	026
1303	13.60	33.5		36073	32933	30.1	026
1302	11.1/3	27.5		36062	32954	30.1	027
1301	11.05	27.4		36063	32972	30.1	027
1301	$F_t$ 12.80	31.7		36049	32986	30.1	027

1308	10.20	24.9		36251	33111	30.3	026
1307	13.60	33.8		36118	32977	30.2	026
1306	11-1/3	27.7		35989	32870	30.1	026
1305	11.05	27.4		36005	32874	30.1	026
1305	$F_t$ 12.80	31.5		36082	32925	30.1	026

1312	10.20	24.9		36350	33284	30.4	027
1311	13.60	33.1		36282	33213	30.4	027
1310	11-1/3	27.4		36252	33147	30.3	027
1310	11.05	26.9		36215	33120	30.3	027
1309	$F_t$ 12.80	31.4		36268	33153	30.3	027

COMMENT

# DATA SHEET 5 (DS-5)

## RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: JAPAN SITE NO. 1-2 DATE: 1 November 1978

$I_{as}$  300 A.  $K_1$  0 . 98  $K_2$  1 . 00  $K_3$  1 . 07

LOOP HEIGHT 1000 (X/ft.) TRIPOD \_\_\_\_\_ HELICOPTER X  
(ABOVE: ~~XXXX~~ - SEA LEVEL)

TYPE OF MEASUREMENT: HELICOPTER CAL. \_\_\_\_\_ BENCHMARK \_\_\_\_\_ ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	$E_g$ (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1325	10.20	28.8	340	32222	29585	26.4	028
1324	13.60	38.1		32235	29587	26.4	028
1323	11.1/3	31.4		32207	29564	26.3	028
1322	11.05	31.1		32226	29529	26.3	028
1321	$F_t$ 12.80	36.5		32198	29485	26.3	028

1330	10.20	28.8		32226	29577	26.4	028
1329	13.60	38.5		32178	29552	26.3	028
1328	11-1/3	31.4		32195	29573	26.3	028
1327	11.05	30.6		32261	29632	26.4	028
1326	$F_t$ 12.80	36.5		32270	29630	26.4	028

1334	10.20	28.9		32220	29624	26.4	028
1333	13.60	38.0		32302	29657	26.4	028
1332	11-1/3	31.6		32246	29618	26.4	028
1332	11.05	30.7		32243	29610	26.4	028
1331	$F_t$ 12.80	36.3		32251	29597	26.4	028

COMMENT

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: JAPAN SITE NO. 1-3 DATE: 1 November 1978

I<sub>as</sub> 300 A. K<sub>1</sub> 0 . 98 K<sub>2</sub> 1 . 00 K<sub>3</sub> 1 . 07

LOOP HEIGHT 1000 (X./ft.)  
(ABOVE: ~~XXXX~~ - SEA LEVEL) TRIPOD \_\_\_\_\_ HELICOPTER X

TYPE OF MEASUREMENT: HELICOPTER CAL. \_\_\_\_\_ BENCHMARK \_\_\_\_\_ ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	E <sub>g</sub> (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. 07.
1347	10.20	35.5	340	27393	24204	21.2	024
1346	13.60	46.8		27501	24281	21.3	024
1345	11.1/3	39.0		27550	24346	21.4	024
1344	11.05	37.3		27597	24400	21.4	024
1343	F <sub>t</sub> 12.80	44.2		27588	24412	21.4	024

1351	10.20	35.4		27504	24436	21.4	025
1350	13.60	47.4		27595	24484	21.5	024
1349	11-1/3	39.1		27554	24452	21.4	024
1349	11.05	38.4		27485	24376	21.4	024
1348	F <sub>t</sub> 12.80	44.6		27353	24241	21.2	024

1355	10.20	35.6		27408	24436	21.3	025
1354	13.60	47.1		27461	24461	21.4	025
1354	11-1/3	39.3		27448	24435	21.3	025
1353	11.05	38.2		27450	24425	21.3	025
1352	F <sub>t</sub> 12.80	44.3		27450	24421	21.3	025

COMMENT



## DATA SHEET 5 (DS-5)

## RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: JAPAN SITE NO. 1-4 DATE: 1 November 1978 $I_{as}$  300 A.  $K_1$  0 . 98  $K_2$  1 . 00  $K_3$  1 . 07LOOP HEIGHT 1000 (X/ft.) TRIPOD        HELICOPTER X  
(ABOVE: ~~XXXX~~ - SEA LEVEL)TYPE OF MEASUREMENT: HELICOPTER CAL.        BENCHMARK        ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	$E_g$ (mV)	HEADING (Mag.)	D M E		DIST. km.	AZ. OT.
				D1	D2		
1413	10.20	51.0	340	21352	19301	15.3	027
1412	13.60	67.2		21346	19297	15.3	027
1411	11.1/3	56.4		21378	19273	15.3	027
1410	11.05	55.4		21365	19260	15.3	027
1409	$F_t$ 12.80	63.3		21356	19199	15.2	026

1417	10.20	51.2		21282	19434	15.3	028
1416	13.60	68.1		21214	19335	15.2	028
1415	11-1/3	57.0		21251	19328	15.2	028
1415	11.05	55.2		21292	19309	15.2	027
1414	$F_t$ 12.80	63.4		21345	19311	15.3	027

1420	10.20	50.6		21299	19605	15.3	029
1419	13.60	67.7		21267	19543	15.3	029
1418	11-1/3	56.8		21249	19519	15.3	029
1418	11.05	55.5		21284	19513	15.3	029
1417	$F_t$ 12.80	63.7		21263	19501	15.3	029

COMMENT

## DATA SHEET 5 (DS-5)

## RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: JAPAN SITE NO. 2-1 DATE: 31 October 1978 $I_{as}$  300 A.  $K_1$  0 . 98  $K_2$  1 . 00  $K_3$  1 . 07LOOP HEIGHT 1000 (X./ft.) TRIPOD \_\_\_\_\_ HELICOPTER X  
(ABOVE: ~~9000~~ - SEA LEVEL)TYPE OF MEASUREMENT: HELICOPTER CAL. \_\_\_\_\_ BENCHMARK \_\_\_\_\_ ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	$E_g$ (mV)	HEADING (Mag.)	D M E		DIST. km.	AZ. OT.
				D1	D2		
1153	10.20	25.7	030	31368	27145	30.2	077
1152	13.60	32.7		31229	27058	30.1	077
1151	11.1/3	26.8		31361	27189	30.3	077
1151	11.05	26.2		31347	27143	30.2	077
1150	$F_t$ 12.80	32.1		31341	27199	30.3	077

1158	10.20	25.5		31324	27090	30.2	077
1157	13.60	32.5		31288	27086	30.2	077
1156	11-1/3	26.5		31392	27157	30.3	077
1155	11.05	26.3		31437	27206	30.3	077
1154	$F_t$ 12.80	31.4		31357	27150	30.2	077

1200	10.20	25.8		31444	27245	30.3	077
1159	13.60	32.7		31352	27122	30.2	077
1158	11-1/3	26.6		31466	27232	30.3	077
1201	11.05	26.5		31498	27326	30.4	077
1158	$F_t$ 12.80	31.3		31385	27165	30.3	077

COMMENT

## DATA SHEET 5 (DS-5)

## RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: JAPAN SITE NO. 2-2 DATE: 31 October 1978 $I_{as}$  300 A.  $K_1$  0 . 98  $K_2$  1 . 00  $K_3$  1 . 07LOOP HEIGHT 1000 (~~XXXX~~ /ft.) TRIPOD \_\_\_\_\_ HELICOPTER X  
(ABOVE: ~~XXXX~~ - SEA LEVEL)TYPE OF MEASUREMENT: HELICOPTER CAL. \_\_\_\_\_ BENCHMARK \_\_\_\_\_ ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	$E_g$ (mV)	HEADING (Mag.)	D M E		DIST. km.	AZ. OT.
				D1	D2		
1217	10.20	29.5	030	27248	22957	26.0	077
1215	13.60	38.2		27178	22890	25.9	077
1215	11.1/3	32.0		27183	22905	25.9	077
1214	11.05	30.8		27201	22940	26.0	077
1213	$F_t$ 12.80	36.3		27197	22918	25.9	077

1221	10.20	28.8		27457	23147	26.2	077
1220	13.60	38.0		27446	23126	26.2	077
1219	11-1/3	31.8		27329	23028	26.1	077
1218	11.05	30.7		27309	22982	26.0	077
1217	$F_t$ 12.80	36.6		27304	22993	26.0	077

1225	10.20	29.0		27557	23313	26.3	077
1225	13.60	37.6		27531	23286	26.3	077
1224	11-1/3	31.5		27556	23289	26.3	077
1223	11.05	30.5		27564	23265	26.3	077
1222	$F_t$ 12.80	36.6		27459	23165	26.2	077

COMMENT

## DATA SHEET 5 (DS-5)

## RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: JAPAN SITE NO. 2-3 DATE: 1 November 1978I<sub>as</sub> 300 A. K<sub>1</sub> 0 . 98 K<sub>2</sub> 1 . 00 K<sub>3</sub> 1 . 07LOOP HEIGHT 1000 (~~ft.~~/ft.) TRIPOD \_\_\_\_\_ HELICOPTER X  
(ABOVE: ~~SEA LEVEL~~ - SEA LEVEL)TYPE OF MEASUREMENT: HELICOPTER CAL. \_\_\_\_\_ BENCHMARK \_\_\_\_\_ ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	E <sub>g</sub> (mV)	HEADING (Mag.)	D M E		DIST. km.	AZ. OT.
				D1	D2		
1031	10.20	38.6	030	20641	17234	19.6	082
1030	13.60	51.5		20760	17308	19.7	081
1030	11.1/3	42.9		20766	17325	19.7	081
1029	11.05	41.4		20799	17371	19.8	082
1028	F <sub>t</sub> 12.80	47.0		20897	17498	19.9	082

1035	10.20	38.2		20680	17349	19.7	082
1034	13.60	51.7		20712	17356	19.7	082
1033	11-1/3	43.1		20692	17323	19.7	082
1032	11.05	42.2		20663	17273	19.7	082
1032	F <sub>t</sub> 12.80	48.2		20645	17239	19.6	082

1039	10.20	38.2		20707	17363	19.7	082
1038	13.60	51.7		20663	17334	19.7	082
1038	11-1/3	43.5		20611	17297	19.7	082
1037	11.05	41.8		20596	17292	19.6	082
1036	F <sub>t</sub> 12.80	48.0		20634	17313	19.7	082

COMMENT

# DATA SHEET 5 (DS-5)

## RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: JAPAN SITE NO. 2-4 DATE: 1 November 1978

I<sub>as</sub> 300 A. K<sub>1</sub> 0 . 98 K<sub>2</sub> 1 . 00 K<sub>3</sub> 1 . 07

LOOP HEIGHT 1000 (X./ft.) TRIPOD \_\_\_\_\_ HELICOPTER X  
(ABOVE: ~~XXXX~~ - SEA LEVEL)

TYPE OF MEASUREMENT: HELICOPTER CAL. \_\_\_\_\_ BENCHMARK \_\_\_\_\_ ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	E <sub>g</sub> (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1054	10.20	48.2	035	16868	13925	15.9	084
1053	13.60	64.7		16912	13906	15.9	084
1052	11.1/3	54.2		16917	13871	15.9	084
1051	11.05	53.3		16799	13803	15.8	084
1050	F <sub>t</sub> 12.80	61.4		16767	13763	15.7	084

1100	10.20	47.4		17047	14051	16.0	084
1059	13.60	63.9		17017	14052	16.0	084
1058	11-1/3	53.6		16983	14035	16.0	084
1056	11.05	52.3		16987	14038	16.0	084
1055	F <sub>t</sub> 12.80	59.8		16966	14036	16.0	084

1107	10.20	47.0		17291	14263	16.3	084
1106	13.60	63.2		17074	14157	16.1	084
1105	11-1/3	52.5		17111	14114	16.1	084
1103	11.05	52.9		17073	14068	16.1	084
1102	F <sub>t</sub> 12.80	59.5		17117	14072	16.1	084

COMMENT

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: JAPAN SITE NO. 3-1 DATE: 31 October 1978

$I_{as}$  300 A.  $K_1$  0 . 98  $K_2$  1 . 00  $K_3$  1 . 07

LOOP HEIGHT 1000 (X/ft.) TRIPOD \_\_\_\_\_ HELICOPTER X  
(ABOVE: ~~SIX~~ - SEA LEVEL)

TYPE OF MEASUREMENT: HELICOPTER CAL. \_\_\_\_\_ BENCHMARK \_\_\_\_\_ ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	$E_g$ (mV)	HEADING (Mag.)	D1	D2	DIST. km.	AZ. OT.
1355	10.20	23.7	065	28460	32796	32.1	116
1354	13.60	30.8		28457	32796	32.1	116
1353	11.1/3	25.3		28461	32781	32.1	116
1352	11.05	25.2		28454	32783	32.1	116
1351	$F_t$ 12.80	29.6		28430	32759	32.1	116

1359	10.20	23.7		28654	32948	32.3	116
1358	13.60	31.0		28634	32935	32.2	116
1357	11-1/3	25.3		28505	32840	32.1	116
1356	11.05	25.2		28486	32827	32.1	116
1355	$F_t$ 12.80	29.8		28492	32831	32.1	116

1362	10.20	23.8		28951	33184	32.5	115
1362	13.60	30.4		28921	33180	32.5	116
1361	11-1/3	24.9		28855	33120	32.5	116
1360	11.05	24.9		28807	33077	32.4	116
1359	$F_t$ 12.80	29.6		28658	32964	32.3	116

COMMENT

## DATA SHEET 5 (DS-5)

## RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: JAPAN SITE NO. 3-2 DATE: 31 October 1978 $I_{as}$  300 A.  $K_1$  0 . 98  $K_2$  1 . 00  $K_3$  1 . 07LOOP HEIGHT 1000 (~~X~~./ft.) TRIPOD \_\_\_\_\_ HELICOPTER X  
(ABOVE: ~~SURFACE~~ - SEA LEVEL)TYPE OF MEASUREMENT: HELICOPTER CAL. \_\_\_\_\_ BENCHMARK \_\_\_\_\_ ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	$E_g$ (mV)	HEADING (Mag.)	D M E		DIST. km.	AZ. OT.
				D1	D2		
1421	10.20	32.3	065	20184	24325	23.5	115
1420	13.60	43.1		20091	24270	23.4	116
1420	11.1/3	36.0		19938	24172	23.3	116
1419	11.05	35.1		19903	24035	23.2	115
1418	$F_t$ 12.80	40.3		19993	24050	23.2	115

1425	10.20	32.2		20286	24375	23.6	115
1424	13.60	42.1		20224	24339	23.5	115
1424	11-1/3	35.6		20160	24323	23.5	115
1423	11.05	34.5		20206	24370	23.5	115
1422	$F_t$ 12.80	40.1		20215	24370	23.5	115

1430	10.20	32.0		20244	24286	23.5	115
1430	13.60	42.3		20179	24238	23.4	115
1429	11-1/3	35.8		20176	24197	23.4	115
1428	11.05	34.4		20160	24204	23.4	115
1427	$F_t$ 12.80	40.1		20230	24273	23.5	115

COMMENT

## DATA SHEET 5 (DS-5)

## RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: JAPAN SITE NO. 3-3 DATE: 31 October 1978I<sub>as</sub> 300 A. K<sub>1</sub> 0 . 98 K<sub>2</sub> 1 . 00 K<sub>3</sub> 1 . 07LOOP HEIGHT 1000 (~~X~~/ft.) TRIPOD \_\_\_\_\_ HELICOPTER X  
(ABOVE: ~~SEA LEVEL~~ - SEA LEVEL)TYPE OF MEASUREMENT: HELICOPTER CAL. \_\_\_\_\_ BENCHMARK \_\_\_\_\_ ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	E <sub>g</sub> (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1450	10.20	34.4	065	18598	22613	21.8	115
1449	13.60	46.1		18514	22605	21.7	115
1448	11.1/3	39.3		18408	22558	21.7	115
1447	11.05	37.9		18371	22548	21.6	116
1446	F <sub>t</sub> 12.80	43.6		18288	22494	21.6	116

1455	10.20	34.7		18633	22676	21.8	115
1454	13.60	46.1		18711	22694	21.9	115
1453	11-1/3	38.5		18787	22721	21.9	114
1452	11.05	37.5		18677	22649	21.8	115
1451	F <sub>t</sub> 12.80	42.8		18673	22659	21.8	115

1502	10.20	34.8		18043	22447	21.4	117
1501	13.60	47.7		18176	22489	21.5	116
1500	11-1/3	39.5		18244	22523	21.6	116
1459	11.05	38.1		18277	22528	21.6	116
1458	F <sub>t</sub> 12.80	42.8		18287	22573	21.6	116

COMMENT



# DATA SHEET 5 (DS-5)

## RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: JAPAN SITE NO. 3-4 DATE: 31 October 1978

I<sub>as</sub> 300 A. K<sub>1</sub> 0 . 98 K<sub>2</sub> 1 . 00 K<sub>3</sub> 1 . 07

LOOP HEIGHT 1000 (X./ft.)  
(ABOVE: ~~XXXX~~ - SEA LEVEL) TRIPOD \_\_\_\_\_ HELICOPTER X

TYPE OF MEASUREMENT: HELICOPTER CAL. \_\_\_\_\_ BENCHMARK \_\_\_\_\_ ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	E <sub>g</sub> (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1516	10.20	49.2	065	12592	16885	15.6	117
1515	13.60	65.2		12708	17108	15.8	117
1514	11.1/3	54.5		12706	17149	15.8	118
1513	11.05	53.6		12670	17110	15.7	118
1512	F <sub>t</sub> 12.80	61.6		12570	17093	15.7	118

1521	10.20	48.0		12622	17357	15.9	119
1520	13.60	66.1		12488	17278	15.8	119
1519	11-1/3	56.1		12196	16850	15.4	119
1518	11.05	54.7		12230	16796	15.3	118
1517	F <sub>t</sub> 12.80	62.5		12483	16860	15.5	117

1526	10.20	48.1		12681	17376	15.9	119
1525	13.60	64.7		12545	17353	15.8	119
1524	11-1/3	54.5		12588	17269	15.8	119
1523	11.05	53.4		12646	17274	15.8	118
1522	F <sub>t</sub> 12.80	60.3		12645	17308	15.8	119

COMMENT

## DATA SHEET 5 (DS-5)

## RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: JAPAN SITE NO. 4-1 DATE: 1 November 1978 $I_{as}$  300 A.  $K_1$  0 . 98  $K_2$  1 . 00  $K_3$  1 . 07LOOP HEIGHT 2000 (X./ft.)  
(ABOVE: ~~SURFACE~~ - SEA LEVEL) TRIPOD \_\_\_\_\_ HELICOPTER XTYPE OF MEASUREMENT: HELICOPTER CAL. \_\_\_\_\_ BENCHMARK \_\_\_\_\_ ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	$E_g$ (mV)	HEADING (Mag.)	D M E		DIST. km.	AZ. OT.
				D1	D2		
1524	10.20	26.0	145	23237	31651	29.5	195
1523	13.60	34.1		23191	31581	29.4	195
1522	11.1/3	28.7		23151	31526	29.4	195
1522	11.05	28.1		23061	31396	29.3	195
1521	$F_t$ 12.80	33.0		23042	31361	29.3	195

1528	10.20	25.8		23410	31884	29.7	194
1527	13.60	34.2		23347	31825	29.6	194
1526	11-1/3	28.4		23381	31855	29.6	194
1525	11.05	27.6		23347	31799	29.6	194
1525	$F_t$ 12.80	32.7		23311	31752	29.6	194

1533	10.20	25.6		23435	31899	29.7	194
1531	13.60	34.2		23416	31884	29.7	194
1530	11-1/3	28.3		23465	31919	29.7	194
1530	11.05	27.4		23448	31927	29.7	194
1529	$F_t$ 12.80	32.1		23438	31918	29.7	194

COMMENT

## DATA SHEET 5 (DS-5)

## RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: JAPAN SITE NO. 4-2 DATE: 1 November 1978 $I_{as}$  300 A.  $K_1$  0 . 98  $K_2$  1 . 00  $K_3$  1 . 07LOOP HEIGHT 2000 (X/ft.) TRIPOD \_\_\_\_\_ HELICOPTER X  
(ABOVE: ~~SURFACE~~ - SEA LEVEL)TYPE OF MEASUREMENT: HELICOPTER CAL. \_\_\_\_\_ BENCHMARK \_\_\_\_\_ ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	$E_g$ (mV)	HEADING (Mag.)	D M E		DIST. km.	AZ. OT.
				D1	D2		
1545	10.20	29.4	145	19162	27596	25.3	195
1544	13.60	39.5		19115	27575	25.3	195
1543	11.1/3	33.3		19054	27466	25.2	195
1542	11.05	32.0		19174	27623	25.3	195
1541	$F_t$ 12.80	37.2		19132	27558	25.3	195

1552	10.20	29.2		19373	27750	25.5	196
1551	13.60	39.5		19277	27621	25.4	196
1550	11-1/3	33.1		19230	27627	25.4	195
1550	11.05	32.1		19157	27587	25.3	195
1545	$F_t$ 12.80	37.3		19010	27426	25.2	195

1556	10.20	29.3		19453	27815	25.6	196
1555	13.60	39.1		19434	27832	25.6	195
1554	11-1/3	32.6		19410	27830	25.6	195
1554	11.05	31.8		19374	27756	25.5	195
1553	$F_t$ 12.80	37.0		19352	27704	25.5	196

COMMENT

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: JAPAN SITE NO. 4-3 DATE: 1 November 1978

$I_{as}$  300 A.  $K_1$  0 . 98  $K_2$  1 . 00  $K_3$  1 . 07

LOOP HEIGHT 2500 (~~X~~/ft.) TRIPOD \_\_\_\_\_ HELICOPTER X  
(ABOVE: ~~XXXX~~ - SEA LEVEL)

TYPE OF MEASUREMENT: HELICOPTER CAL. \_\_\_\_\_ BENCHMARK \_\_\_\_\_ ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	$E_g$ (mV)	HEADING (Mag.)	D M E		DIST. km.	AZ. OT.
				D1	D2		
1628	10.20	36.9	325	14033	22277	19.9	198
1626	13.60	49.9		13931	21984	19.7	198
1625	11.1/3	41.2		14043	22121	19.9	198
1624	11.05	40.1		14325	22614	20.2	197
1622	$F_t$ 12.80	46.0		14467	22812	20.4	197

1634	10.20	37.4		14051	22515	20.0	197
1634	13.60	50.2		13971	22367	19.9	197
1633	11-1/3	41.6		14076	22556	20.0	196
1632	11.05	41.3		14018	22422	19.9	197
1629	$F_t$ 12.80	47.0		14044	22352	19.9	197

1638	10.20	37.8		14000	22420	19.9	197
1637	13.60	50.1		13977	22366	19.9	197
1637	11-1/3	42.9		13966	22341	19.9	197
1636	11.05	41.9		14004	22418	19.9	197
1635	$F_t$ 12.80	47.3		14018	22432	20.0	197

COMMENT

## DATA SHEET 5 (DS-5)

## RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: JAPAN SITE NO. 4-4 DATE: 1 November 1978 $I_{as}$  300 A.  $K_1$  0 . 98  $K_2$  1 . 00  $K_3$  1 . 07LOOP HEIGHT 2500 (~~X~~/ft.) TRIPOD \_\_\_\_\_ HELICOPTER X  
(ABOVE: ~~X~~ - SEA LEVEL)TYPE OF MEASUREMENT: HELICOPTER CAL. \_\_\_\_\_ BENCHMARK \_\_\_\_\_ ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	$E_g$ (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1647	10.20	50.7	325	9083	18246	14.9	195
1646	13.60	67.1		9064	18196	14.9	196
1646	11.1/3	56.7		9065	18160	14.9	196
1645	11.05	55.5		9029	18174	14.9	195
1645	$F_t$ 12.80	63.9		8973	18189	14.8	195

1652	10.20	50.9		9165	18293	15.0	195
1651	13.60	66.8		9140	18274	15.0	195
1650	11-1/3	56.5		9084	18124	14.9	196
1650	11.05	55.6		9060	18134	14.9	196
1649	$F_t$ 12.80	63.7		9079	18177	14.9	196

1656	10.20	51.3		9147	18223	15.0	196
1655	13.60	67.3		9163	18194	15.0	196
1654	11-1/3	56.4		9188	18269	15.0	196
1654	11.05	55.0		9162	18250	15.0	196
1653	$F_t$ 12.80	62.8		9130	18215	15.0	196

COMMENT

# DATA SHEET 5 (DS-5)

## RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: JAPAN SITE NO. 6-1 DATE: 4 November 1978

I<sub>as</sub> 300 A. K<sub>1</sub> 0 . 98 K<sub>2</sub> 1 . 00 K<sub>3</sub> 1 . 07

LOOP HEIGHT 2500 (~~X~~/ft.) TRIPOD        HELICOPTER X  
(ABOVE: ~~XXXX~~ - SEA LEVEL)

TYPE OF MEASUREMENT: HELICOPTER CAL.        BENCHMARK        ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	E <sub>g</sub> (mV)	HEADING (Mag.)	D M E		DIST. km.	AZ. OT.
				D1	D2		
1227	10.20	25.5	165	23174	29525	29.8	209
1226	13.60	33.7	165	23077	29391	29.7	210
1225	11.1/3	27.4	165	23021	29300	29.7	210
1216	11.05	26.8	345	22595	28464	29.6	214
1215	F <sub>t</sub> 12.80	32.1	345	22554	28478	29.5	214

1232	10.20	25.3	165	23248	29682	29.8	209
1231	13.60	33.6	165	23224	29651	29.8	209
1230	11-1/3	27.4	165	23216	29628	29.8	209
1229	11.05	26.8	165	23257	29650	29.9	209
1228	F <sub>t</sub> 12.80	31.8	165	23202	29573	29.8	209

1236	10.20	25.1	165	23452	29942	30.0	208
1235	13.60	33.4	165	23448	29941	30.0	208
1234	11-1/3	27.5	165	23297	29784	29.8	208
1234	11.05	27.0	165	23166	19619	29.7	208
1233	F <sub>t</sub> 12.80	31.7	165	23281	29727	29.8	208

COMMENT

## DATA SHEET 5 (DS-5)

## RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: JAPAN SITE NO. 6-2 DATE: 4 November 1978 $I_{as}$  300 A.  $K_1$  0 . 98  $K_2$  1 . 00  $K_3$  1 . 07LOOP HEIGHT 2500 (~~X~~/ft.) TRIPOD \_\_\_\_\_ HELICOPTER X  
(ABOVE: ~~XXXX~~ - SEA LEVEL)TYPE OF MEASUREMENT: HELICOPTER CAL. \_\_\_\_\_ BENCHMARK \_\_\_\_\_ ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	$E_g$ (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1248	10.20	30.4	345	18043	24525	24.7	211
1247	13.60	39.7		18151	24640	24.8	211
1247	11.1/3	33.0		18135	24617	24.8	211
1246	11.05	31.8		18077	24551	24.8	211
1245	$F_t$ 12.80	38.0		18102	24572	24.8	211

1252	10.20	30.6		17920	24381	24.6	211
1251	13.60	39.8		18059	24550	24.7	211
1250	11-1/3	33.0		18135	24617	24.8	211
1250	11.05	31.8		18129	24616	24.8	211
1249	$F_t$ 12.80	38.0		18087	24565	24.8	211

1257	10.20	31.4		16651	22756	23.6	216
1255	13.60	40.3		17505	23853	24.3	213
1254	11-1/3	33.1		17913	24319	24.7	212
1254	11.05	31.8		18072	24508	24.8	211
1253	$F_t$ 12.80	38.3		17872	24309	24.6	211

COMMENT

DATA SHEET 5 (DS-5)

RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: JAPAN SITE NO. 6-3 DATE: 4 November 1978

I<sub>as</sub> 300 A. K<sub>1</sub> 0 . 98 K<sub>2</sub> 1 . 00 K<sub>3</sub> 1 . 07

LOOP HEIGHT 2500 (~~X~~/ft.) TRIPOD \_\_\_\_\_ HELICOPTER X  
(ABOVE: ~~SURFACE~~ - SEA LEVEL)

TYPE OF MEASUREMENT: HELICOPTER CAL. \_\_\_\_\_ BENCHMARK \_\_\_\_\_ ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	E <sub>g</sub> (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1312	10.20	38.0	345	12683	19412	19.4	213
1312	13.60	49.9		12746	19481	19.5	213
1311	11.1/3	41.8		12741	19501	19.4	212
1310	11.05	40.5		12767	19539	19.4	212
1309	F <sub>t</sub> 12.80	47.8		12776	19581	19.4	212

1316	10.20	37.3		12726	19289	19.6	214
1315	13.60	49.0		12715	19322	19.5	214
1315	11-1/3	41.6		12697	19285	19.5	214
1314	11.05	39.9		12643	19299	19.4	214
1313	F <sub>t</sub> 12.80	46.7		12651	19351	19.4	213

1320	10.20	37.5		12640	19161	19.5	215
1319	13.60	49.2		12654	19181	19.5	215
1318	11-1/3	41.3		12695	19235	19.6	215
1317	11.05	39.5		12754	19304	19.6	215
1316	F <sub>t</sub> 12.80	46.1		12732	19295	19.3	214

COMMENT



## DATA SHEET 5 (DS-5)

## RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: JAPAN SITE NO. 6-4 DATE: 4 November 1978 $I_{as}$  300 A.  $K_1$  0 . 98  $K_2$  1 . 00  $K_3$  1 . 07LOOP HEIGHT 2500 (~~X~~/ft.) TRIPOD \_\_\_\_\_ HELICOPTER X  
(ABOVE: ~~XXXX~~ - SEA LEVEL)TYPE OF MEASUREMENT: HELICOPTER CAL. \_\_\_\_\_ BENCHMARK \_\_\_\_\_ ROUTINE X

TIME (LOCAL)	FREQUENCY (kHz)	$E_g$ (mV)	HEADING (Mag.)	D M E		DIST. km.	AZ. OT.
				D1	D2		
1331	10.20	48.8	347	8807	16017	15.3	213
1330	13.60	65.1		8824	16053	15.3	212
1330	11.1/3	54.3		8818	16046	15.3	212
1329	11.05	52.7		8774	15997	15.3	212
1328	$F_t$ 12.80	60.9		8771	15975	15.3	213

1334	10.20	49.0		8766	15944	15.3	213
1334	13.60	64.9		8803	15991	15.4	213
1333	11-1/3	54.5		8806	16014	15.3	213
1332	11.05	52.0		8905	16133	15.4	212
1331	$F_t$ 12.80	59.8		8864	16090	15.4	212

1339	10.20	49.3		8694	15836	15.3	214
1338	13.60	65.3		8761	15919	15.4	213
1337	11-1/3	54.7		8699	15852	15.3	213
1336	11.05	52.6		8830	15935	15.5	214
1335	$F_t$ 12.80	60.3		8719	15877	15.3	213

COMMENT

## DATA SHEET 5 (DS-5)

## RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: JAPANSITE NO. B1DATE: 3 Nov 1978I<sub>as</sub> 350 A. K<sub>1</sub> 0.98 K<sub>2</sub> 0.99 K<sub>3</sub> 1.00LOOP HEIGHT 2 (m. ~~ft.~~)  
(ABOVE: SURFACE - ~~SEA LEVEL~~)TRIPOD XHELICOPTER       TYPE OF MEASUREMENT: HELICOPTER CAL.       BENCHMARK XROUTINE       

TIME (LOCAL)	FREQUENCY (kHz)	E <sub>g</sub> (mV)	HEADING (Mag.)	D M E		DIST. km.	AZ. OT.
				D1	D2		
1546	10.20	30.1					
1543	13.60	38.2					
1541	11.1/3	31.9					
1538	11.05	31.7					
1533	F <sub>t</sub> 12.80	36.4					

1552	10.20	30.2					
1551	13.60	38.2					
1549	11-1/3	32.1					
1548	11.05	31.6					
1547	F <sub>t</sub> 12.80	36.6					

1559	10.20	30.3					
1558	13.60	38.0					
1556	11-1/3	31.6					
1555	11.05	31.4					
1554	F <sub>t</sub> 12.80	36.7					

COMMENT: NULL > 40db. NO POWER LINES.NATIONAL SCENIC POINT - NO CHANGE LIKELY.

## DATA SHEET 5 (DS-5)

## RADIO FIELD INTENSITY MEASUREMENTS

OMEGA STATION: JAPANSITE NO. B1DATE: 3 Nov 1978 $I_{as}$  350 A. $K_1$  0.98 $K_2$  0.99 $K_3$  1.00LOOP HEIGHT 2 (m. ~~ft.~~)  
(ABOVE: SURFACE - ~~SEA LEVEL~~)TRIPOD XHELICOPTER       TYPE OF MEASUREMENT: HELICOPTER CAL.       BENCHMARK XROUTINE       

TIME (LOCAL)	FREQUENCY (kHz)	$E_g$ (mV)	HEADING (Mag.)	D1	D M E D2	DIST. km.	AZ. OT.
1620	10.20	28.8					
1618	13.60	36.1					
1612	11.1/3	30.5					
1611	11.05	32.0					
1609	$F_t$ 12.80	36.3					

	10.20						
	13.60						
	11-1/3						
	11.05						
	$F_t$ 12.80						

	10.20						
	13.60						
	11-1/3						
	11.05						
	$F_t$ 12.80						

COMMENT: STATION CREW PRACTICE, NOT ON DS-6.

DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. \_\_\_\_\_

BENCHMARK \_\_\_\_\_

ROUTINE X

HEIGHT-GAIN, SURFACE (2m.)

LOOP SIDE OF HELD AWAY FROM THE STATION.

OMEGA STATION: JAPAN

SITE NUMBER: 2

DATE: 29 OCT 1978

Distance: 29.0 km.,  $K_1 = \frac{I_a}{I_{as}} = \underline{0.98}$   $K_2 = \frac{1.00}{\text{Loop Factor}}$   $K_3 = \frac{1.07}{\text{Vehicle Factor}}$

Dist. (km.)	Freq. (kHz)	$I_{as}$ (A)	$E_g$ (mV)	$I_a$ (A)	$E_m$ (mV/m)	$E_r$ (mV/m)	$P_r$ (kW)	$h_e$ (m)	$R_r$ (Ohm)	$E_{rd}/I_a$ (Units)
.	10.20	350	27.4	343	29.3	28.9	7.8	191	0.0665	2.447
.			27.1		29.0	28.6	7.7	189	0.0651	2.420
.			27.3		29.2	28.8	7.8	190	0.0661	2.438
.	13.60		36.4		38.9	38.7	14.0	191	0.1187	3.269
.			36.4		38.9	38.7	14.0	191	0.1187	3.269
.			36.6		39.2	38.9	14.1	192	0.1201	3.287
.	11-1/3		29.2		31.2	30.9	8.9	184	0.0759	2.614
.			29.4		31.7	31.3	9.2	186	0.0780	2.650
.			29.9		32.0	31.7	9.4	188	0.0796	2.677
.	11.05		29.0		31.0	30.7	8.8	187	0.0748	2.595
.			28.9		30.9	30.6	8.7	186	0.0743	2.586
.			29.0		31.0	30.7	8.8	187	0.0748	2.595
.	$f_{12.80}$		34.5		36.9	36.6	12.5	192	0.1065	3.096
.			34.6		37.0	36.7	12.6	193	0.1071	3.105
.			34.6		37.0	36.7	12.6	193	0.1071	3.105
.										
.										

## DATA SHEET 6 (DS-6)

## RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. \_\_\_\_\_

BENCHMARK \_\_\_\_\_

ROUTINE X

HEIGHT-GAIN, SURFACE (2 m.)

LOOP SIDE OF HELO TOWARD THE STATION

OMEGA STATION: JAPAN SITE NUMBER: 2 DATE: 29 OCT 1978Distance: 29 km.,  $K_1 = \frac{I_a}{I_{as}} = \underline{0.98}$   $K_2 = \frac{1.00}{\text{Loop Factor}}$   $K_3 = \frac{1.07}{\text{Vehicle Factor}}$   
(If constant)

Dist. (km.)	Freq. (kHz)	$I_{as}$ (A)	$E_q$ (mV)	$I_a$ (A)	$E_m$ (mV/m)	$E_r$ (mV/m)	$P_r$ (kW)	$h_e$ (m)	$R_r$ (Ohm)	$E_{rd}/I_a$ (Units)
.	10.20	350	27.2	343	29.1	28.7	7.7	190	0.0656	2.429
.			27.1		29.0	28.6	7.7	189	0.0651	2.420
.			27.1		29.0	28.6	7.7	189	0.0651	2.420
.	13.60		36.5		39.1	38.8	14.0	192	0.1194	3.278
.			36.5		39.1	38.8	14.0	192	0.1194	3.278
.			36.4		38.9	38.7	14.0	191	0.1187	3.269
.	11-1/3		29.6		31.7	31.3	9.2	186	0.0780	2.650
.			29.5		31.6	31.2	9.1	185	0.0775	2.641
.			29.7		31.8	31.4	9.2	187	0.0786	2.659
.	11.05		29.0		31.0	30.7	8.8	187	0.0748	2.595
.			28.9		30.9	30.6	8.7	186	0.0743	2.586
.			28.9		30.9	30.6	8.7	186	0.0743	2.586
.	$F_{t_{12.80}}$		34.4		36.8	36.5	12.5	192	0.1059	3.087
.			34.7		37.1	36.8	12.7	194	0.1077	3.114
.			34.4		36.8	36.5	12.5	192	0.1059	3.087
.										
.										

DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. \_\_\_\_\_ BENCHMARK \_\_\_\_\_ ROUTINE X

HEIGHT-GAIN, 500 FT. ABOVE SEA LEVEL.

OMEGA STATION: JAPAN

2

SITE NUMBER:

DATE: 29 OCT 1978

Distance: 29.0 km.,  $K_1 = 0.98$   $K_2 = 1.00$   $K_3 = 1.07$   
(If constant)  $I_a/I_{as}$  Loop Factor Vehicle Factor

Dist. (km.)	Freq. (kHz)	$I_{as}$ (A)	$E_g$ (mV)	$I_a$ (A)	$E_m$ (mV/m)	$E_r$ (mV/m)	$P_r$ (kW)	$h_g$ (m)	$R_r$ (Ohm)	$E_{rd}/I_a$ (Units)
.	10.20	350	30.4	343	32.5	32.1	9.6	212	0.0819	2.715
.										
.										
.	13.60		40.0		42.8	42.5	16.9	210	0.1434	3.592
.										
.										
.	11-1/3		33.3		35.6	35.3	11.6	209	0.0988	2.981
.										
.										
.	11.05		32.4		34.7	34.3	11.0	209	0.0934	2.899
.										
.										
.	$F_t$ 12.80		38.7		41.4	41.1	15.8	216	0.1340	3.472
.										
.										
.										
.										

## DATA SHEET 6 (DS-6)

## RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. \_\_\_\_\_

BENCHMARK \_\_\_\_\_

ROUTINE X

HEIGHT-GAIN, 1,000 FT. ABOVE SEA LEVEL.

OMEGA STATION: JAPAN

SITE NUMBER: 2DATE: 29 OCT 1978Distance: 29 . 0 km.,  $K_1 = \frac{I_a}{I_{as}} = \frac{0.98}{1.00}$   $K_2 = \frac{1.00}{1.07}$   $K_3 = \frac{1.07}{1.07}$ 

(If constant)

Dist. (km.)	Freq. (kHz)	$I_{as}$ (A)	$E_q$ (mV)	$I_a$ (A)	$E_m$ (mV/m)	$E_r$ (mV/m)	$P_r$ (kW)	$h_e$ (m)	$R_r$ (Ohm)	$E_{pd}/I_a$ (Units)
.	10.20	350	30.8	343	33.0	32.5	9.9	215	0.0841	2.751
.										
.										
.	13.60		40.9		43.8	43.4	17.6	215	0.1499	3.673
.										
.										
.	11-1/3		33.5		35.8	35.5	11.8	211	0.0999	2.999
.										
.										
.	11.05		32.5		34.8	34.4	11.1	209	0.0940	2.908
.										
.										
.	$F_{t12.80}$		39.0		41.7	41.4	16.0	218	0.1361	3.499
.										
.										
.										
.										

DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. \_\_\_\_\_ BENCHMARK \_\_\_\_\_ ROUTINE X

HEIGHT - GAIN, 1,500 FT. ABOVE SEA LEVEL.

OMEGA STATION: JAPAN SITE NUMBER: 2 DATE: 29 OCT 1978

Distance: 29.0 km.,  $K_1 = \frac{I_a}{I_{as}} = \underline{0.98}$   $K_2 = \frac{P_r}{\text{Loop Factor}} = \underline{1.00}$   $K_3 = \frac{R_r}{\text{Vehicle Factor}} = \underline{1.07}$

Dist. (km.)	Freq. (kHz)	$I_{as}$ (A)	$E_g$ (mV)	$I_a$ (A)	$E_m$ (mV/m)	$E_r$ (mV/m)	$P_r$ (kW)	$h_e$ (m)	$R_r$ (Ohm)	$E_{rd}/I_a$ (Units)
.	10.20	350	31.2	343	33.4	33.0	10.1	217	0.0863	2.786
.										
.										
.	13.60		40.9		43.8	43.4	17.6	215	0.1499	3.673
.										
.										
.	11-1/3		33.6		36.0	35.6	11.8	211	0.1005	3.008
.										
.										
.	11.05		32.6		34.9	34.5	11.1	210	0.0945	2.917
.										
.										
.	$F_t$ 12.80		38.9		41.6	41.3	15.9	217	0.1354	3.490
.										
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## DATA SHEET 6 (DS-6)

## RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. \_\_\_\_\_

BENCHMARK \_\_\_\_\_

ROUTINE X

HEIGHT-GAIN, 2,000 FT. ABOVE SEA LEVEL

OMEGA STATION: JAPAN SITE NUMBER: 2 DATE: 29 OCT 1978Distance: 29.0 km.,  $K_1 = \frac{I_a}{I_{as}} = \underline{0.98}$   $K_2 = \frac{1.00}{\text{Loop Factor}}$   $K_3 = \frac{1.07}{\text{Vehicle Factor}}$   
(If constant)

Dist. (km.)	Freq. (kHz)	$I_{as}$ (A)	$E_g$ (mV)	$I_a$ (A)	$E_m$ (mV/m)	$E_r$ (mV/m)	$P_r$ (kW)	$h_e$ (m)	$R_r$ (Ohm)	$E_{rd}/I_a$ (Units)
.	10.20	350	31.4	343	33.6	33.2	10.3	219	0.0874	2.804
.										
.										
.	13.60		40.9		43.8	43.4	17.6	215	0.1499	3.673
.										
.										
.	11-1/3		33.8		36.2	35.8	12.0	212	0.1017	3.026
.										
.										
.	11.05		33.0		35.3	34.9	11.4	213	0.0969	2.953
.										
.										
.	$f_{12.80}$		38.9		41.6	41.3	15.9	217	0.1354	3.490
.										
.										
.										
.										

## DATA SHEET 6 (DS-6)

## RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. \_\_\_\_\_

BENCHMARK X

ROUTINE \_\_\_\_\_

OMEGA STATION: JAPAN

SITE NUMBER: B2DATE: 29 Oct 1978Distance: 29.0 km.,  $K_1 = \frac{I_a}{I_{as}} = \underline{0.98}$   $K_2 = \underline{0.99}$   $K_3 = \underline{1.00}$   
(If constant) Loop Factor Vehicle Factor

Dist. (km.)	Freq. (kHz)	$I_{as}$ (A)	$E_q$ (mV)	$I_a$ (A)	$E_m$ (mV/m)	$E_r$ (mV/m)	$P_r$ (kW)	$h_e$ (m)	$R_r$ (Ohm)	$E_{rd}/I_a$ (Units)
.	10.20	350	29.3	343	29.0	28.6	7.7	189	0.0651	2.421
.			29.3		29.0	28.6	7.7	189	0.0651	2.421
.			29.4		29.1	28.7	7.7	190	0.0656	2.429
.	13.60		39.6		39.2	38.9	14.2	193	0.1203	3.291
.			39.5		39.1	38.8	14.1	192	0.1197	3.282
.			39.7		39.3	39.0	14.2	193	0.1209	3.299
.	11-1/3		32.0		31.7	31.4	9.2	186	0.0781	2.651
.			32.3		32.0	31.6	9.4	188	0.0795	2.676
.			32.2		31.9	31.5	9.3	187	0.0790	2.667
.	11.05		31.4		31.1	30.7	8.8	187	0.0751	2.600
.			31.4		31.1	30.7	8.8	187	0.0751	2.600
.			31.4		31.1	30.7	8.8	187	0.0751	2.600
.	$F_t$ 12.80		37.2		36.8	36.5	12.5	192	0.1060	3.088
.			37.5		37.1	36.8	12.7	194	0.1077	3.113
.			37.4		37.0	36.7	12.6	193	0.1071	3.105
.										
.										

## DATA SHEET 6 (DS-6)

## RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. \_\_\_\_\_

BENCHMARK \_\_\_\_\_

ROUTINE X

OMEGA STATION: JAPAN

SITE NUMBER: 1-1DATE: 1 Nov 1978

Distance: \_\_\_\_\_ km.,  $K_1 = \frac{0.98}{I_a/I_{as}}$   $K_2 = \frac{1.00}{\text{Loop Factor}}$   $K_3 = \frac{1.07}{\text{Vehicle Factor}}$   
 (If constant)

Dist. (km.)	Freq. (kHz)	$I_{as}$ (A)	$E_g$ (mV)	$I_a$ (A)	$E_m$ (mV/m)	$E_r$ (mV/m)	$P_r$ (kW)	$h_e$ (m)	$R_r$ (Ohm)	$E_{rd}/I_a$ (Units)
30.2	10.20	300	25.3	294	27.1	26.8	7.3	214	0.0839	2.748
30.3			24.9		26.6	26.3	7.1	212	0.0818	2.714
30.4			24.9		26.6	26.3	7.1	212	0.0824	2.723
30.1	13.60		33.5		35.8	35.6	12.8	213	0.1476	3.645
30.2			33.8		36.2	35.9	13.1	216	0.1513	3.690
30.4			33.1		35.4	35.2	12.7	213	0.1471	3.638
30.1	11-1/3		27.5		29.4	29.1	8.5	209	0.0989	2.983
30.1			27.7		29.6	29.4	8.7	211	0.1003	3.005
30.3			27.4		29.3	29.0	8.6	210	0.0995	2.993
30.1	11.05		27.4		29.3	29.0	8.5	214	0.0981	2.971
30.1			27.4		29.3	29.0	8.5	214	0.0981	2.971
30.3			26.9		28.8	28.5	8.3	211	0.0958	2.937
30.1	<sup>F</sup> 12.80		31.7		33.9	33.7	11.4	214	0.1320	3.446
30.1			31.5		33.7	33.4	11.3	213	0.1303	3.425
30.3			31.4		33.6	33.3	11.3	214	0.1312	3.437
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DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. \_\_\_\_\_

BENCHMARK \_\_\_\_\_

ROUTINE \_\_\_\_\_

X

OMEGA STATION: JAPAN

SITE NUMBER: 1-2

DATE: 1 NOV 1978

Distance: \_\_\_\_\_ km.,  $K_1 = 0.98$   $K_2 = 1.00$   $K_3 = 1.07$   
(If constant)  $I_a/I_{as}$  Loop Factor Vehicle Factor

Dist. (km.)	Freq. (kHz)	$I_{as}$ (A)	$E_g$ (mV)	$I_a$ (A)	$E_m$ (mV/m)	$E_r$ (mV/m)	$P_r$ (kW)	$h_e$ (m)	$R_r$ (Ohm)	$E_{rd}/I_a$ (Units)
26.4	10.20	300	28.8	294	30.8	30.3	7.1	213	0.0825	2.725
26.4			28.8		30.8	30.3	7.1	213	0.0825	2.725
26.4			28.9		30.9	30.4	7.2	213	0.0831	2.734
26.4	13.60		38.1		40.8	40.4	12.6	212	0.1463	3.629
26.3			38.5		41.2	40.8	12.8	214	0.1482	3.653
26.4			38.0		40.7	40.3	12.6	212	0.1455	3.619
26.3	11-1/3		31.4		33.6	33.2	8.5	208	0.0979	2.968
26.3			31.4		33.6	33.2	8.5	208	0.0979	2.968
26.4			31.6		33.8	33.4	8.6	211	0.0999	2.998
26.3	11.05		31.1		33.3	32.8	8.3	212	0.0959	2.937
26.4			30.6		32.7	32.3	8.1	209	0.0935	2.901
26.4			30.7		32.8	32.4	8.1	210	0.0942	2.911
26.3	$f_{12.80}$		36.5		39.1	38.7	11.5	215	0.1329	3.459
26.4			36.5		39.1	38.7	11.6	216	0.1340	3.472
26.4			36.3		38.8	38.5	11.5	215	0.1325	3.453
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DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. \_\_\_\_\_

BENCHMARK \_\_\_\_\_

ROUTINE X

OMEGA STATION: JAPAN

SITE NUMBER: 1-3

DATE: 1 Nov 1978

Distance:

km.,

$K_1 =$

0.98

$K_2 =$

1.00

$K_3 =$

1.07

(If constant)

$I_a/I_{as}$

Loop Factor

Vehicle Factor

Dist. (km.)	Freq. (kHz)	$I_{as}$ (A)	$E_q$ (mV)	$I_a$ (A)	$E_m$ (mV/m)	$E_r$ (mV/m)	$P_r$ (kW)	$h_e$ (m)	$R_r$ (Ohm)	$E_{rd}/I_a$ (Units)
21.2	10.20	300	35.5	294	38.0	37.1	6.9	209	0.0795	2.675
21.4			35.4		37.9	37.0	7.0	210	0.0806	2.693
21.3			35.6		38.1	37.2	7.0	210	0.0807	2.695
21.3	13.60		46.8		50.1	49.4	12.3	209	0.1424	3.580
21.5			47.4		50.7	50.1	12.9	214	0.1489	3.660
21.4			47.1		50.4	49.7	12.6	212	0.1456	3.620
21.4	11-1/3		39.0		41.7	40.9	8.5	209	0.0987	2.980
21.4			39.1		41.8	41.0	8.6	210	0.0992	2.988
21.3			39.3		42.1	41.3	8.6	210	0.0992	2.989
21.4	11.05		37.3		39.9	39.1	7.8	205	0.0901	2.848
21.4			38.4		41.1	40.3	8.3	211	0.0955	2.932
21.3			38.2		40.9	40.1	8.1	209	0.0936	2.902
21.4	$f_{12.80}$		44.2		47.3	46.6	11.0	211	0.1278	3.391
21.2			44.6		47.7	47.0	11.0	211	0.1276	3.389
21.3			44.3		47.4	46.7	11.0	210	0.1271	3.383
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## DATA SHEET 6 (DS-6)

## RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. \_\_\_\_\_

BENCHMARK \_\_\_\_\_

ROUTINE X

OMEGA STATION: JAPAN

SITE NUMBER: 1-4

DATE: 1 Nov 1978

Distance: \_\_\_\_\_ km.,  $K_1 = 0.98$   $K_2 = 1.00$   $K_3 = 1.07$   
(If constant)  $I_a/I_{as}$  Loop Factor Vehicle Factor

Dist. (km.)	Freq. (kHz)	$I_{as}$ (A)	$E_g$ (mV)	$I_a$ (A)	$E_m$ (mV/m)	$E_r$ (mV/m)	$P_r$ (kW)	$h_g$ (m)	$R_r$ (Ohm)	$E_{rd}/I_a$ (Units)
15.3	10.20	300	51.0	294	54.6	52.2	7.1	212	0.0819	2.716
15.3			51.2		54.8	52.4	7.1	213	0.0826	2.726
15.3			50.6		54.1	51.8	7.0	210	0.0807	2.694
15.3	13.60		67.2		71.9	70.1	12.8	213	0.1478	3.647
15.2			68.1		72.9	71.0	12.9	215	0.1497	3.671
15.3			67.7		72.4	70.6	13.0	215	0.1500	3.674
15.3	11-1/3		56.4		60.3	58.2	8.8	213	0.1019	3.028
15.2			57.0		61.0	58.8	8.9	213	0.1026	3.039
15.3			56.8		60.8	58.6	8.9	214	0.1033	3.049
15.3	11.05		55.4		59.3	57.0	8.5	214	0.0979	2.969
15.2			55.2		59.1	56.8	8.3	212	0.0959	2.937
15.3			55.5		59.4	57.1	8.5	214	0.0983	2.974
15.2	<sup>F</sup> t <sub>12.80</sub>		63.3		67.7	65.8	11.1	211	0.1285	3.401
15.3			63.4		67.8	65.9	11.3	213	0.1307	3.430
15.3			63.7		68.2	66.2	11.4	214	0.1320	3.446
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## DATA SHEET 6 (DS-6)

## RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. \_\_\_\_\_

BENCHMARK \_\_\_\_\_

ROUTINE \_\_\_\_\_

X

OMEGA STATION: JAPAN SITE NUMBER: 2-1 DATE: 31 OCT 1978

Distance: \_\_\_\_\_ km.,  $K_1 = 0.98$   $K_2 = 1.00$   $K_3 = 1.07$   
(If constant)  $I_a/I_{as}$  Loop Factor Vehicle Factor

Dist. (km.)	Freq. (kHz)	$I_{as}$ (A)	$E_q$ (mV)	$I_a$ (A)	$E_m$ (mV/m)	$E_r$ (mV/m)	$P_r$ (kW)	$h_e$ (m)	$R_r$ (Ohm)	$E_{rd}/I_a$ (Units)
30.2	10.20	300	25.7	294	27.5	27.2	7.5	218	0.0866	2.791
30.2			25.5		27.3	27.0	7.4	216	0.0852	2.770
30.3			25.8		27.6	27.3	7.6	219	0.0878	2.812
30.1	13.60		32.7		35.0	34.8	12.2	208	0.1407	3.558
30.2			32.5		34.8	34.5	12.1	208	0.1399	3.548
30.2			32.7		35.0	34.8	12.2	209	0.1416	3.570
30.3	11-1/3		26.8		28.7	28.4	8.2	206	0.0952	2.927
30.3			26.5		28.4	28.1	8.0	203	0.0931	2.894
30.3			26.6		28.5	28.2	8.1	204	0.0938	2.905
30.2	11.05		26.2		28.0	27.8	7.8	205	0.0903	2.851
30.3			26.3		28.1	27.9	7.9	207	0.0916	2.871
30.4			26.5		28.4	28.1	8.1	209	0.0936	2.903
30.3	<sup>F</sup> <sub>t</sub> 12.80		32.1		34.3	34.1	11.9	218	0.1371	3.513
30.2			31.4		33.6	33.3	11.3	213	0.1304	3.425
30.3			31.3		33.5	33.2	11.3	213	0.1304	3.426
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## DATA SHEET 6 (DS-6)

## RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. \_\_\_\_\_

BENCHMARK \_\_\_\_\_

ROUTINE X

OMEGA STATION: JAPAN

SITE NUMBER: 2-2DATE: 31 OCT. 1978Distance: \_\_\_\_\_ km.,  $K_1 = \frac{I_a}{I_{as}}$   $K_2 = \frac{1.00}{\text{Loop Factor}}$   $K_3 = \frac{1.07}{\text{Vehicle Factor}}$   
(If constant)

Dist. (km.)	Freq. (kHz)	$I_{as}$ (A)	$E_q$ (mV)	$I_a$ (A)	$E_m$ (mV/m)	$E_r$ (mV/m)	$P_r$ (kW)	$h_e$ (m)	$R_r$ (Ohm)	$E_{rd}/I_a$ (Units)
26.0	10.20	300	29.5	294	31.6	31.1	7.2	214	0.0839	2.747
26.2			28.8		30.8	30.3	7.0	211	0.0812	2.703
26.3			29.0		31.0	30.5	7.2	213	0.0830	2.733
25.9	13.60		38.2		40.9	40.5	12.2	209	0.1415	3.568
26.2			38.0		40.7	40.3	12.4	210	0.1433	3.591
26.3			37.6		40.2	39.9	12.2	209	0.1414	3.567
25.9	11.13		32.0		34.2	33.8	8.5	209	0.0985	2.977
26.1			31.8		34.0	33.6	8.5	209	0.0988	2.982
26.3			31.5		33.7	33.3	8.5	209	0.0985	2.977
26.0	11.05		30.8		33.0	32.5	7.9	207	0.0918	2.875
26.0			30.7		32.8	32.4	7.9	206	0.0912	2.866
26.3			30.5		32.6	32.2	8.0	207	0.0922	2.881
25.9	$F_{12.80}$		36.3		38.8	38.4	11.0	211	0.1274	3.387
26.0			36.6		39.2	38.8	11.3	213	0.1306	3.428
26.2			36.6		39.2	38.8	11.5	215	0.1326	3.455
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## DATA SHEET 6 (DS-6)

## RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. \_\_\_\_\_

BENCHMARK \_\_\_\_\_

ROUTINE XOMEGA STATION: JAPAN \_\_\_\_\_ SITE NUMBER: 2-3 DATE: 1 Nov. 1978Distance: \_\_\_\_\_ km.,  $K_1 = \frac{0.98}{I_a/I_{as}}$   $K_2 = \frac{1.00}{\text{Loop Factor}}$   $K_3 = \frac{1.07}{\text{Vehicle Factor}}$   
(If constant)

Dist. (km.)	Freq. (kHz)	$I_{as}$ (A)	$E_q$ (mV)	$I_a$ (A)	$E_m$ (mV/m)	$E_r$ (mV/m)	$P_r$ (kW)	$h_e$ (m)	$R_r$ (Ohm)	$E_{rd}/I_a$ (Units)
19.6	10.20	300	38.6	294	41.3	40.2	6.9	209	0.0797	2.678
19.7			38.2		40.9	39.8	6.8	208	0.0789	2.665
19.7			38.2		40.9	39.8	6.8	208	0.0789	2.665
19.7	13.60		51.5		55.1	54.3	12.7	213	0.1468	3.635
19.7			51.7		55.3	54.5	12.8	214	0.1480	3.649
19.7			51.7		55.3	54.5	12.8	214	0.1480	3.649
19.7	11-1/3		42.9		45.9	44.9	8.7	211	0.1005	3.008
19.7			43.1		46.1	45.1	8.8	212	0.1015	3.022
19.7			43.5		46.5	45.5	8.9	214	0.1034	3.050
19.8	11.05		41.4		44.3	43.3	8.2	210	0.0944	2.915
19.7			42.2		45.2	44.1	8.4	213	0.0970	2.955
19.6			41.8		44.7	43.7	8.1	210	0.0942	2.912
19.9	$F_{t_{12.80}}$		47.0		50.3	49.4	10.8	208	0.1244	3.346
19.6			48.2		51.6	50.7	11.0	210	0.1268	3.378
19.7			48.0		51.4	50.5	11.0	210	0.1270	3.381
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## DATA SHEET 6 (DS-6)

## RADIO FIELD INTERFERENCE CALCULATIONS

HELICOPTER CAL. \_\_\_\_\_

BENCHMARK \_\_\_\_\_

ROUTINE XOMEGA STATION: JAPAN SITE NUMBER: 2-4 DATE: 1 Nov 1978Distance: \_\_\_\_\_ km.,  $K_1 = \frac{I_a}{I_{as}} = \underline{0.98}$   $K_2 = \frac{1.00}{\text{Loop Factor}}$   $K_3 = \frac{1.07}{\text{Vehicle Factor}}$   
(If constant)

Dist. (km.)	Freq. (kHz)	$I_{as}$ (A)	$E_g$ (mV)	$I_a$ (A)	$E_m$ (mV/m)	$E_r$ (mV/m)	$P_r$ (kW)	$h_e$ (m)	$R_r$ (Ohm)	$E_{rd}/I_a$ (Units)
15.9	10.20	300	48.2	294	51.6	49.5	6.9	209	0.0795	2.676
16.0			47.4		50.7	48.7	6.7	207	0.0780	2.649
16.3			47.0		50.3	48.3	6.9	209	0.0798	2.680
15.9	13.60		64.7		69.2	67.6	12.8	214	0.1485	3.656
16.0			63.9		68.4	66.8	12.7	213	0.1468	3.635
16.1			63.2		67.6	66.1	12.6	212	0.1455	3.618
15.9	11-1/3		54.2		58.0	56.1	8.8	213	0.1021	3.032
16.0			53.6		57.4	55.5	8.7	212	0.1012	3.018
16.1			52.5		56.2	54.3	8.5	209	0.0984	2.976
15.8	11.05		53.3		57.0	55.0	8.4	213	0.0971	2.956
16.0			52.3		56.0	54.0	8.3	212	0.0961	2.940
16.1			52.9		56.6	54.7	8.6	216	0.0996	2.994
15.7	$F_{t12.80}$		61.4		65.7	63.9	11.2	212	0.1295	3.413
16.0			59.8		64.0	62.3	11.0	211	0.1278	3.391
16.1			59.5		63.7	62.0	11.1	211	0.1282	3.396
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DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. \_\_\_\_\_

BENCHMARK \_\_\_\_\_

ROUTINE X

OMEGA STATION: JAPAN

SITE NUMBER: 3-1

DATE: 31 OCT. 1978

Distance: \_\_\_\_\_ km.,  $K_1 = 0.98$   $K_2 = 1.00$   $K_3 = 1.07$   
(If constant)  $I_a/I_{as}$  Loop Factor Vehicle Factor

Dist. (km.)	Freq. (kHz)	$I_{as}$ (A)	$E_g$ (mV)	$I_a$ (A)	$E_m$ (mV/m)	$E_r$ (mV/m)	$P_r$ (kW)	$h_e$ (m)	$R_r$ (Ohm)	$E_{rd}/I_a$ (Units)
32.1	10.20	300	23.7	294	25.4	25.1	7.2	214	0.0834	2.740
32.3			23.7		25.4	25.1	7.3	215	0.0845	2.757
32.5			23.8		25.5	25.2	7.5	217	0.0863	2.786
32.1	13.60		30.8		33.0	32.8	12.3	209	0.1422	3.577
32.2			31.0		33.2	33.0	12.8	213	0.1477	3.646
32.5			30.4		32.5	32.3	12.3	209	0.1420	3.575
32.1	11-1/3		25.3		27.1	26.8	8.2	206	0.0954	2.931
32.1			25.3		27.1	26.8	8.2	206	0.0954	2.931
32.5			24.9		26.6	26.4	8.2	205	0.0948	2.921
32.1	11.05		25.2		27.0	26.7	8.2	210	0.0946	2.918
32.1			25.2		27.0	26.7	8.2	210	0.0946	2.918
32.4			24.9		26.6	26.4	8.1	210	0.0941	2.910
32.1	$f_{12.80}$		29.6		31.7	31.5	11.3	214	0.1311	3.435
32.1			29.8		31.9	31.7	11.5	215	0.1329	3.458
32.3			29.6		31.7	31.5	11.5	215	0.1328	3.457
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# DATA SHEET 6 (DS-6)

## RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. \_\_\_\_\_

BENCHMARK \_\_\_\_\_

ROUTINE X

OMEGA STATION: JAPAN SITE NUMBER: 3-2 DATE: 31 OCT 1978

Distance: \_\_\_\_\_ km.,  $K_1 = \frac{0.98}{I_a/I_{as}}$   $K_2 = \frac{1.00}{\text{Loop Factor}}$   $K_3 = \frac{1.07}{\text{Vehicle Factor}}$   
(If constant)

Dist. (km.)	Freq. (kHz)	$I_{as}$ (A)	$E_q$ (mV)	$I_a$ (A)	$E_m$ (mV/m)	$E_r$ (mV/m)	$P_r$ (kW)	$h_e$ (m)	$R_r$ (Ohm)	$E_{rd}/I_a$ (Units)
23.5	10.20	300	32.3	294	34.6	33.9	7.0	211	0.0816	2.709
23.6			32.2		34.5	33.8	7.1	212	0.0818	2.713
23.5			32.0		34.2	33.6	6.9	209	0.0801	2.684
23.4	13.60		43.1		46.1	45.6	12.7	212	0.1464	3.630
23.5			42.1		45.0	44.6	12.2	208	0.1409	3.561
23.4			42.3		45.3	44.8	12.3	208	0.1410	3.563
23.3	11-1/3		36.0		38.5	37.9	8.7	211	0.1003	3.004
23.5			35.6		38.1	37.5	8.6	210	0.0998	2.997
23.4			35.8		38.3	37.7	8.6	211	0.1000	3.001
23.2	11.05		35.1		37.6	36.9	8.2	210	0.0943	2.914
23.5			34.5		36.9	36.3	8.1	209	0.0936	2.902
23.4			34.4		36.8	36.2	8.0	207	0.0922	2.881
23.2	$f_{12.80}$		40.3		43.1	42.6	10.8	209	0.1254	3.360
23.5			40.1		42.9	42.4	11.0	211	0.1275	3.387
23.5			40.1		42.9	42.4	11.0	211	0.1275	3.387
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## DATA SHEET 6 (DS-6)

## RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. \_\_\_\_\_

BENCHMARK \_\_\_\_\_

ROUTINE XOMEGA STATION: JAPAN SITE NUMBER: 3-3 DATE: 31 OCT 1978Distance: \_\_\_\_\_ km.,  $K_1 = \frac{I_a}{I_{as}} = 0.98$   $K_2 = \frac{1.00}{\text{Loop Factor}}$   $K_3 = \frac{1.07}{\text{Vehicle Factor}}$   
(If constant)

Dist. (km.)	Freq. (kHz)	$I_{as}$ (A)	$E_g$ (mV)	$I_a$ (A)	$E_m$ (mV/m)	$E_r$ (mV/m)	$P_r$ (kW)	$h_e$ (m)	$R_r$ (Ohm)	$E_{rd}/I_a$ (Units)
21.8	10.20	300	34.4	294	36.8	36.0	6.8	208	0.0791	2.668
21.8			34.7		37.1	36.3	7.0	210	0.0805	2.692
21.4			34.8		37.2	36.4	6.7	207	0.0779	2.648
21.7	13.60		46.1		49.3	48.7	12.4	210	0.1435	3.594
21.9			46.1		49.3	48.7	12.6	212	0.1463	3.628
21.5			47.7		51.0	50.4	13.0	216	0.1508	3.684
21.7	11-1/3		39.3		42.1	41.3	8.9	214	0.1031	3.047
21.9			38.5		41.2	40.5	8.7	212	0.1009	3.013
21.6			39.5		42.3	41.5	8.9	214	0.1032	3.048
21.6	11.05		37.9		40.6	39.8	8.2	210	0.0948	2.922
21.8			37.5		40.1	39.4	8.2	210	0.0946	2.918
21.6			38.1		40.8	40.0	8.3	212	0.0958	2.937
21.6	$f_{12.80}$		43.6		46.7	46.0	11.0	210	0.1268	3.377
21.8			42.8		45.8	45.1	10.8	208	0.1245	3.347
21.6			42.8		45.8	45.1	10.6	206	0.1221	3.316
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## DATA SHEET 6 (DS-6)

## RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. \_\_\_\_\_

BENCHMARK \_\_\_\_\_

ROUTINE XOMEGA STATION: JAPAN SITE NUMBER: 3-4 DATE: 31 OCT 1978Distance: \_\_\_\_\_ km.,  $K_1 = \frac{I_a}{I_{as}}$   $K_2 = \frac{1.00}{\text{Loop Factor}}$   $K_3 = \frac{1.07}{\text{Vehicle Factor}}$   
(If constant)

Dist. (km.)	Freq. (kHz)	$I_{as}$ (A)	$E_g$ (mV)	$I_a$ (A)	$E_m$ (mV/m)	$E_r$ (mV/m)	$P_r$ (kW)	$h_e$ (m)	$R_r$ (Ohm)	$E_{rd}/I_a$ (Units)
15.6	10.20	300	49.2	294	52.6	50.4	6.9	209	0.0795	2.676
15.9			48.0		51.4	49.3	6.8	208	0.0789	2.665
15.9			48.1		51.5	49.4	6.8	208	0.0792	2.670
15.8	13.60		65.2		69.8	68.1	12.9	214	0.1488	3.660
15.8			66.1		70.7	69.0	13.2	217	0.1530	3.710
15.8			64.7		69.2	67.6	12.7	213	0.1466	3.632
15.8	11-1/3		54.5		58.3	56.3	8.8	213	0.1019	3.028
15.4			56.1		60.0	57.9	8.8	213	0.1022	3.033
15.8			54.5		58.3	56.3	8.8	213	0.1019	3.028
15.7	11.05		53.6		57.4	55.3	8.4	213	0.0969	2.953
15.3			54.7		58.5	56.3	8.3	211	0.0955	2.931
15.8			53.4		57.1	55.1	8.4	213	0.0975	2.962
15.7	<sup>F</sup> t <sub>12.80</sub>		61.6		65.9	64.1	11.3	213	0.1303	3.424
15.5			62.5		66.9	65.0	11.3	213	0.1306	3.428
15.8			60.3		64.5	62.8	10.9	210	0.1265	3.375
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DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. \_\_\_\_\_

BENCHMARK \_\_\_\_\_

ROUTINE X

OMEGA STATION: JAPAN SITE NUMBER: 4-1 DATE: 1 NOV 1978

Distance: \_\_\_\_\_ km.,  $K_1 = \frac{I_a}{I_{as}}$   $K_2 = \frac{1.00}{\text{Loop Factor}}$   $K_3 = \frac{1.07}{\text{Vehicle Factor}}$

Dist. (km.)	Freq. (kHz)	$I_{as}$ (A)	$E_q$ (mV)	$I_a$ (A)	$E_m$ (mV/m)	$E_r$ (mV/m)	$P_r$ (kW)	$h_e$ (m)	$R_r$ (Ohm)	$E_{rd}/I_a$ (Units)
29.5	10.20	300	26.0	294	27.8	27.5	7.3	215	0.0845	2.757
29.7			25.8		27.6	27.3	7.3	215	0.0843	2.755
29.7			25.6		27.4	27.1	7.2	213	0.0830	2.733
29.4	13.60		34.1		36.5	36.2	12.6	212	0.1458	3.623
29.6			34.2		36.6	36.3	12.7	213	0.1467	3.634
29.7			34.2		36.6	36.3	12.9	215	0.1498	3.671
29.4	11-1/3		28.7		30.7	30.4	8.9	213	0.1027	3.040
29.6			28.4		30.4	30.1	8.8	213	0.1019	3.029
29.7			28.3		30.3	30.0	8.8	213	0.1019	3.029
29.3	11.05		28.1		30.1	29.7	8.4	213	0.0976	2.964
29.6			27.6		29.5	29.2	8.3	212	0.0962	2.942
29.7			27.4		29.3	29.0	8.2	211	0.0954	2.935
29.3	$f_{t_{12.80}}$		33.0		35.3	35.0	11.7	217	0.1354	3.491
29.6			32.7		35.0	34.7	11.7	217	0.1357	3.495
29.7			32.1		34.3	34.1	11.4	214	0.1317	3.443
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## DATA SHEET 6 (DS-6)

## RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. \_\_\_\_\_

BENCHMARK \_\_\_\_\_

ROUTINE XOMEGA STATION: JAPAN SITE NUMBER: 4-2 DATE: 1 Nov 1978Distance: \_\_\_\_\_ km.,  $K_1 = \frac{I_a}{I_{as}} = \underline{0.98}$   $K_2 = \frac{1.00}{\text{Loop Factor}}$   $K_3 = \frac{1.07}{\text{Vehicle Factor}}$   
(If constant)

Dist. (km.)	Freq. (kHz)	$I_{as}$ (A)	$E_g$ (mV)	$I_a$ (A)	$E_m$ (mV/m)	$E_r$ (mV/m)	$P_r$ (kW)	$h_g$ (m)	$R_r$ (Ohm)	$E_{rd}/I_a$ (Units)
25.3	10.20	300	29.4	294	31.5	30.9	6.8	208	0.0787	2.662
25.5			29.2		31.2	30.7	6.8	208	0.0789	2.665
25.6			29.3		31.4	30.8	6.9	209	0.0801	2.685
25.3	13.60		39.5		42.3	41.9	12.5	211	0.1442	3.603
25.4			39.5		42.3	41.9	12.6	212	0.1454	3.617
25.6			39.1		41.8	41.4	12.5	211	0.1447	3.609
25.2	11-1/3		33.3		35.6	35.1	8.7	212	0.1008	3.012
25.4			33.1		35.4	34.9	8.8	212	0.1012	3.019
25.6			32.6		34.9	34.4	8.6	210	0.0998	2.997
25.3	11.05		32.0		34.2	33.8	8.1	209	0.0937	2.904
25.3			32.1		34.3	33.9	8.2	210	0.0943	2.914
25.5			31.8		34.0	33.5	8.1	210	0.0941	2.910
25.3	$F_{12.80}$		37.2		39.8	39.4	11.0	211	0.1276	3.389
25.2			37.3		39.9	39.5	11.0	210	0.1272	3.384
25.5			37.0		39.6	39.2	11.1	211	0.1283	3.398
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## DATA SHEET F (DS-6)

## RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. \_\_\_\_\_

BENCHMARK \_\_\_\_\_

ROUTINE X

OMEGA STATION: JAPAN SITE NUMBER: 4-3 DATE: 1 Nov 1978

Distance: \_\_\_\_\_ km.,  $K_1 = 0.98$   $K_2 = 1.00$   $K_3 = 1.07$   
(If constant)  $I_a/I_{as}$  Loop Factor Vehicle Factor

Dist. (km.)	Freq. (kHz)	$I_{as}$ (A)	$E_q$ (mV)	$I_a$ (A)	$E_m$ (mV/m)	$E_r$ (mV/m)	$P_r$ (kW)	$h_e$ (m)	$R_r$ (Ohm.)	$E_{rd}/I_a$ (Units)
19.9	10.20	300	36.9	294	39.5	38.4	6.5	203	0.0752	2.601
20.0			37.4		40.0	39.0	6.7	207	0.0781	2.651
19.9			37.8		40.4	39.4	6.8	208	0.0789	2.665
19.7	13.60		49.9		53.4	52.6	11.9	206	0.1378	3.522
19.9			50.2		53.7	52.9	12.3	209	0.1424	3.580
19.9			50.1		53.6	52.8	12.3	209	0.1419	3.573
19.9	11-1/3		41.2		44.1	43.1	8.2	205	0.0947	2.919
20.0			41.6		44.5	43.6	8.4	208	0.0975	2.963
19.9			42.9		45.9	44.9	8.9	213	0.1027	3.040
20.2	11.05		40.1		42.9	42.0	8.0	208	0.0923	2.883
19.9			41.3		44.2	43.2	8.2	211	0.0949	2.923
19.9			41.9		44.8	43.8	8.4	214	0.0979	2.966
20.4	$f_{12.80}$		46.0		49.2	48.4	10.8	209	0.1254	3.360
19.9			47.0		50.3	49.4	10.8	208	0.1244	3.346
20.0			47.3		50.6	49.8	11.0	210	0.1273	3.385
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## RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. \_\_\_\_\_

BENCHMARK \_\_\_\_\_

ROUTINE X

OMEGA STATION: JAPAN SITE NUMBER: 4-4 DATE: 1 NOV 1978

Distance: \_\_\_\_\_ km.,  $K_1 = \frac{I_a}{I_{as}}$   $K_2 = \frac{1.00}{\text{Loop Factor}}$   $K_3 = \frac{1.07}{\text{Vehicle Factor}}$   
(If constant)

Dist. (km.)	Freq. (kHz)	$I_{as}$ (A)	$E_q$ (mV)	$I_a$ (A)	$E_m$ (mV/m)	$E_r$ (mV/m)	$P_r$ (kW)	$h_g$ (m)	$R_r$ (Ohm)	$E_{pd}/I_a$ (Units)
14.9	10.20	300	50.7	294	54.2	51.8	6.6	205	0.0764	2.623
15.0			50.9		54.5	52.0	6.8	207	0.0782	2.653
15.0			51.3		54.9	52.4	6.9	209	0.0794	2.673
14.9	13.60		67.1		71.8	69.9	12.0	207	0.1394	3.542
15.0			66.8		71.5	69.6	12.1	208	0.1401	3.551
15.0			67.3		72.0	70.1	12.3	209	0.1422	3.577
14.9	11-1/3		56.7		60.7	58.4	8.4	208	0.0973	2.959
14.9			56.5		60.5	58.2	8.3	207	0.0966	2.948
15.0			56.4		60.3	58.1	8.4	208	0.0976	2.964
14.9	11.05		55.5		59.4	57.0	8.6	208	0.0928	2.891
14.9			55.6		59.5	57.1	8.1	209	0.0932	2.896
15.0			55.0		58.9	56.6	8.0	208	0.0925	2.885
14.8	<sup>F</sup> <sub>t</sub> 12.80		63.9		68.4	66.3	10.7	207	0.1238	3.338
14.9			63.7		68.2	66.1	10.8	208	0.1248	3.351
15.0			62.8		67.2	65.2	10.6	207	0.1230	3.327
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## DATA SHEET 6 (DS-6)

## RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. \_\_\_\_\_

BENCHMARK \_\_\_\_\_

ROUTINE XOMEGA STATION: JAPAN SITE NUMBER: 6-1 DATE: 4 Nov 1978Distance: \_\_\_\_\_ km.,  $K_1 = \frac{I_a}{I_{as}}$   $K_2 = \frac{1.00}{\text{Loop Factor}}$   $K_3 = \frac{1.07}{\text{Vehicle Factor}}$   
(If constant)

Dist. (km.)	Freq. (kHz)	$I_{as}$ (A)	$E_q$ (mV)	$I_a$ (A)	$E_m$ (mV/m)	$E_r$ (mV/m)	$P_r$ (kW)	$h_e$ (m)	$R_r$ (Ohm)	$E_{rd}/I_a$ (Units)
29.8	10.20	300	25.5	294	27.3	27.0	7.2	213	0.0829	2.732
29.8			25.3		27.1	26.7	7.1	211	0.0816	2.711
30.0			25.1		26.9	26.5	7.0	211	0.0815	2.708
29.7	13.60		33.7		36.1	35.8	12.6	212	0.1454	3.618
29.8			33.6		36.0	35.7	12.6	212	0.1455	3.619
30.0			33.4		35.7	35.5	12.6	212	0.1458	3.622
29.7	11-1/3		27.4		29.3	29.0	8.3	206	0.0955	2.932
29.8			27.4		29.3	29.0	8.3	207	0.0962	2.942
29.8			27.5		29.4	29.1	8.4	207	0.0969	2.953
29.6	11.05		26.8		28.7	28.4	7.8	206	0.0907	2.857
29.9			26.8		28.7	28.4	8.0	208	0.0926	2.886
29.7			27.0		28.9	28.6	8.0	208	0.0927	2.888
29.5 <sup>F</sup>	12.80		32.1		34.3	34.1	11.2	213	0.1299	3.419
29.8			31.8		34.0	33.8	11.2	213	0.1301	3.422
29.8			31.7		33.9	33.7	11.2	212	0.1293	3.411
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DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. \_\_\_\_\_ BENCHMARK \_\_\_\_\_ ROUTINE X

OMEGA STATION: JAPAN SITE NUMBER: 6-2 DATE: 4 Nov 1978  
 Distance: \_\_\_\_\_ km.,  $K_1 = \frac{I_a}{I_{as}} = \underline{0.98}$   $K_2 = \frac{E_r}{E_m} = \underline{1.00}$   $K_3 = \frac{R_r}{R_{r0}} = \underline{1.07}$   
 (If constant) Loop Factor Vehicle Factor

Dist. (km.)	Freq. (kHz)	$I_{as}$ (A)	$E_g$ (mV)	$I_a$ (A)	$E_m$ (mV/m)	$E_r$ (mV/m)	$P_r$ (kW)	$h_g$ (m)	$R_r$ (Ohm)	$E_{rd}/I_a$ (Units)
24.7	10.20	300	30.4	294	32.5	32.0	6.9	209	0.0801	2.685
24.6			30.6		32.7	32.2	7.0	210	0.0805	2.691
23.6			31.4		33.6	33.0	6.7	206	0.0778	2.645
24.8	13.60		39.7		42.5	42.1	12.1	208	0.1399	3.548
24.7			39.8		42.6	42.2	12.1	207	0.1394	3.542
24.3			40.3		43.1	42.7	12.0	206	0.1383	3.527
24.8	11-1/3		33.0		35.3	34.8	8.3	206	0.0958	2.936
24.8			33.0		35.3	34.8	8.3	206	0.0958	2.936
24.7			33.1		35.4	34.9	8.3	206	0.0956	2.933
24.8	11.05		31.8		34.0	33.5	7.7	204	0.0888	2.828
24.8			31.8		34.0	33.5	7.7	204	0.0888	2.828
24.8			31.8		34.0	33.5	7.7	204	0.0888	2.828
24.8	$f_{12.80}$		38.0		40.7	40.2	11.0	211	0.1278	3.392
24.8			38.0		40.7	40.2	11.0	211	0.1278	3.392
24.6			38.3		41.0	40.5	11.0	211	0.1277	3.390
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DATA SHEET 6 (DS-6)

RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. \_\_\_\_\_

BENCHMARK \_\_\_\_\_

ROUTINE X

OMEGA STATION: JAPAN SITE NUMBER: 6-3 DATE: 4 Nov 78

Distance: \_\_\_\_\_ km.,  $K_1 = \frac{0.98}{I_a/I_{as}}$   $K_2 = \frac{1.00}{\text{Loop Factor}}$   $K_3 = \frac{1.07}{\text{Vehicle Factor}}$   
(If constant)

Dist. (km.)	Freq. (kHz)	$I_{as}$ (A)	$E_g$ (mV)	$I_a$ (A)	$E_m$ (mV/m)	$E_r$ (mV/m)	$P_r$ (kW)	$h_e$ (m)	$R_r$ (Ohm)	$E_{rd}/I_a$ (Units)
19.4	10.20	300	38.0	294	40.7	39.5	6.5	203	0.0756	2.608
19.6			37.3		39.9	38.8	6.4	202	0.0744	2.588
19.5			37.5		40.1	39.0	6.4	202	0.0744	2.588
19.5	13.60		49.9		53.4	52.5	11.7	204	0.1350	3.485
19.5			49.0		52.4	51.6	11.2	200	0.1301	3.422
19.5			49.2		52.6	51.8	11.3	201	0.1312	3.436
19.4	11-1/3		41.8		44.7	43.7	8.0	203	0.0924	2.884
19.5			41.6		44.5	43.5	8.0	203	0.0925	2.886
19.6			41.3		44.2	43.2	8.0	202	0.0922	2.880
19.4	11.05		40.5		43.3	42.3	7.5	201	0.0866	2.791
19.4			39.9		42.7	41.7	7.3	198	0.0840	2.750
19.6			39.5		42.3	41.3	7.3	198	0.0841	2.752
19.4	$f_{12.80}$		47.8		51.1	50.2	10.5	206	0.1220	3.314
19.4			46.7		50.0	49.1	10.1	201	0.1165	3.238
19.3			46.1		49.3	48.4	9.7	198	0.1123	3.179
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## DATA SHEET 6 (DS-6)

## RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. \_\_\_\_\_

BENCHMARK \_\_\_\_\_

ROUTINE X

OMEGA STATION: JAPAN

SITE NUMBER: 6-4DATE: 4 Nov 1978

Distance: \_\_\_\_\_

km.,

 $K_1 =$  $\frac{I_a}{I_{as}}$  $K_2 =$ 

Loop Factor

 $K_3 =$ 

Vehicle Factor

Dist. (km.)	Freq. (kHz)	$I_{as}$ (A)	$E_g$ (mV)	$I_a$ (A)	$E_m$ (mV/m)	$E_r$ (mV/m)	$P_r$ (kW)	$h_e$ (m)	$R_r$ (Ohm)	$E_{rd}/I_a$ (Units)
15.3	10.20	300	48.8	294	52.2	49.9	6.5	203	0.0750	2.598
15.3			49.0		52.4	50.1	6.5	204	0.0756	2.609
15.3			49.3		52.8	50.4	6.6	205	0.0766	2.625
15.3	13.60		65.1		69.7	67.9	12.0	207	0.1387	3.533
15.4			64.9		69.4	67.7	12.1	208	0.1398	3.546
15.4			65.3		69.9	68.1	12.2	209	0.1415	3.568
15.3	11-1/3		54.3		58.1	56.0	8.2	205	0.0944	2.915
15.3			54.5		58.3	56.2	8.2	205	0.0951	2.926
15.3			54.7		58.5	56.4	8.3	206	0.0958	2.937
15.3	11.05		52.7		56.4	54.3	7.7	203	0.0886	2.824
15.4			52.0		55.6	53.6	7.6	202	0.0875	2.806
15.5			52.6		56.3	54.2	7.8	206	0.0908	2.858
15.3	$f_{t_{12.80}}$		60.9		65.2	63.3	10.4	205	0.1206	3.295
15.4			59.8		64.0	62.2	10.2	203	0.1179	3.257
15.3			60.3		64.5	62.7	10.2	203	0.1182	3.262
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RADIO FIELD INTENSITY CALCULATIONS

HELICOPTER CAL. \_\_\_\_\_

BENCHMARK \_\_\_\_\_

X

ROUTINE \_\_\_\_\_

OMEGA STATION: JAPAN

SITE NUMBER: B 1

DATE: 3 NOV 1978

Distance: 35.9 km.,  $K_1 = \frac{I_a}{I_{as}} = \frac{0.98}{0.99} = 0.99$   $K_2 = \frac{E_r}{E_{\eta}} = \frac{29.5}{29.8} = 0.99$   $K_3 = \frac{R_r}{R_{\eta}} = \frac{0.1063}{0.1070} = 1.00$

(If constant)  $K_1 = \frac{I_a}{I_{as}} = \frac{0.98}{0.99} = 0.99$  Loop Factor  $K_2 = \frac{E_r}{E_{\eta}} = \frac{29.5}{29.8} = 0.99$  Vehicle Factor  $K_3 = \frac{R_r}{R_{\eta}} = \frac{0.1063}{0.1070} = 1.00$

Dist. (km.)	Freq. (kHz)	$I_{as}$ (A)	$E_q$ (mV)	$I_a$ (A)	$E_{\eta}$ (mV/m)	$E_r$ (mV/m)	$P_r$ (kW)	$h_e$ (m)	$R_r$ (Ohm)	$E_{rd}/I_a$ (Units)
.	10.20	350	30.1	343	29.8	29.5	12.5	241	0.1063	3.093
.			30.2		29.9	29.6	12.6	242	0.1070	3.103
.			30.3		30.0	29.7	12.7	243	0.1077	3.113
.	13.60		38.2		37.8	37.6	20.3	231	0.1724	3.939
.			38.2		37.8	37.6	20.3	231	0.1724	3.939
.			38.0		37.6	37.4	20.1	229	0.1706	3.919
.	11-1/3		31.9		31.6	31.4	14.1	231	0.1197	3.283
.			32.1		31.8	31.6	14.3	232	0.1213	3.303
.			31.6		31.3	31.1	13.8	228	0.1175	3.252
.	11.05		31.7		31.4	31.2	13.9	235	0.1182	3.261
.			31.6		31.3	31.1	13.8	234	0.1174	3.251
.			31.4		31.1	30.9	13.6	233	0.1159	3.230
.	$F_{t12.80}$		36.4		36.0	35.8	18.4	233	0.1564	3.752
.			36.6		36.2	36.0	18.6	235	0.1581	3.772
.			36.7		36.3	36.1	18.7	235	0.1590	3.782
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